THE DESIGN AND ANALYSIS OF AN EXPECTANCY THEORY MODEL FOR PREDICTING EARLY RETIREMENT

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It was concluded that in practical terms an expectancy theory model modified as suggested by this research holds promise for practical applications involving the prediction of early retirement and other forms of turnover.

THE DESIGN AND ANALYSIS OF AN EXPECTANCY THEORY MODEL FOR PREDICTING EARLY RETIREMENT

A Thesis

Presented to the Faculty of the Graduate School

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Doctor of Philosophy

by

Donald Fred Parker

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ABSTRACT

THE DESIGN AND ANALYSIS OF AN EXPECTANCY THEORY MODEL FOR PREDICTING EARLY RETIREMENT

Donald Fred Parker, Ph. D.
Cornell University 1974

This research had two major goals: to design and test an extended expectancy theory motivational model to predict the choice between further service and early retirement, and to determine based upon self-report measures whether objectively identifiable differences exist between subjects who have and have not chosen to retire early.

A concurrent design was employed. Subjects of the study were 702 Regular Navy Officers who had previously attained retirement eligibility after twenty years of active service; 414 of the respondents were on active duty and 288 were retired. Data were collected using a mailed questionnaire to which almost three-fourths of the sample responded.

The basic configuration of the model combines multiplicatively three measures of expectancy pertaining to the active and retired roles and measures of valence and instrumentality perceptions pertaining to twenty-five second level outcomes (rewards and punishments) to make a prediction that each subject is either retired or has remained on active duty. Predictions made using this configuration were found to be 62.6 percent accurate. When eight of the twenty-five outcomes which were most important to each subject were employed in the model, a significant increase to 68.3 percent accuracy was attained. The

inclusion in the model of two non-expectancy components (expectations of wife and family and hesitancy to retire) resulted in a further increase in accuracy to 79.9 percent. When the accuracy of the expectancy theory model was compared to that of a multiple regression model employing six empirically chosen demographic and perceptual variables as predictors, the accuracy of the two was essentially the same. It was concluded, however, that the expectancy theory model is preferable because of its heuristic superiority.

Analysis of the model components using multiple correlation analysis showed that instrumentality was the most useful component of the model but that valence was also significantly useful. Of three expectancy measures, only the subjective probability of attaining the anticipated post-retirement role was useful, and its incremental value to the model was small. The multiplicative combination of valence and instrumentality was more useful than an additive combination.

The second line of investigation to examine whether or not retired officers are obviously different than active officers on a wide range of personal and demographic variables showed no clear differences except that officers in some specialized fields (professional engineers, Supply Corps officers, physicians) having skills which are readily transferrable to the civilian labor market were disproportionately represented among retirees.

It was concluded that in practical terms an expectancy theory model modified as suggested by this research holds promise for practical applications involving the prediction of early retirement and other forms of turnover.

BIOGRAPHICAL SKETCH

The author was born at Oilton, Oklahoma, November 7, 1934. He received a Bachelor of Arts Degree in Sociology from the University of Oklahoma in January 1957. In April of that year he entered the U. S. Navy. As a Naval Flight Officer, Commander Parker has served in various sea duty assignments; ashore, he has been a member of the staffs of the Chief of Naval Personnel and the Chief of Naval Operations. From 1964-1966 while serving in Washington, D.C., he earned a Master of Science Degree in Personnel Administration at The George Washington University.

Following selection for the Navy Doctoral Studies Program, he was admitted to the New York State School of Industrial and Labor Relations at Cornell University and commenced study there in January 1972. He was elected to membership to the Honor Society of Phi Kappa Phi at Cornell.

After completing requirements for the Ph. D., Commander Parker was ordered to Patrol Squadron Ten as Executive Officer and prospective Commanding Officer.

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Mary Jo Renn performed a large number of valuable services throughout the project, and Diane Shafer not only assisted in the coding but also recruited and trained others as well. Robert Tuttle

provided excellent computer programming assistance.

Many of my fellow graduate students gave me helpful criticism and assistance; I am particularly grateful for the statistical and analytical help given to me by Philip Bobko and Craig Pinder, and for the fresh insights of Richard Shafer.

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There was one additional person without whom this study would not have been possible. To my wife, Jo Ellen, for her encouragement, devotion, hard work and ability to meet seemingly impossible typing deadlines while keeping our home on an even keel, goes my special thanks.

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CHAPTER I

INTRODUCTION AND OVERVIEW

Recently, there has been a substantial increase in the numbers of American employers offering their workers the option of retiring before the customary age of sixty-five. Employees have strongly supported this trend, and some unions have made early retirement a major negotiating issue, foregoing pay increases and other benefits to achieve still lower eligibility ages and increased annuity payments. Although early retirement plans have not led to a wholesale exodus by older employees, increasing numbers are taking advantage of the early retirement option.

Because of the already high costs of early retirement programs to employers, and the possible costs to society if large numbers of retirees find themselves unable to subsist on limited incomes in a period of increasing inflation, one might expect that early retirement would be a subject of great interest to social scientists. Based upon available evidence, however, this has not been the case. Moreover, the research conducted thus far has left a major issue largely unexplored. Previous studies have concentrated primarily on three issues: (1) the extent, provisions, and utilization of early retirement

programs; (2) the attitudes of retirees and non-retiress toward work, leisure and retirement; and (3) post-retirement experiences and adjustment.

The issue which has not been studied is the retirement decision itself. We know little about how the decision is made, whether it is rational or irrational, and what factors enter into the process. Consequently, although previous research has provided information about early retirees in aggregate terms, we lack a means of understanding or predicting the retirement choices made by specific individuals. The realization that this decision had not been studied as an individual decision process and the belief that the continued growth of such programs will require greater understanding of this phenomenon and its causes was the major stimulus for this study.

The study framework is based upon expectancy theory, a theory of work-motivation believed by its proponents to be especially suited for understanding the choices people make in their jobs. The theory assumes hedonistic rationality--that people behave in ways which, as far as they can surmise, will maximize pleasurable occurrences and minimize unpleasant ones. Expectancy theory has become more and more popular in industrial and organizational psychology in the last five years, and it has received a good deal of support. It has not, however, completely lived up to the expectations of its earlier proponents.

Possible reasons for these sub-optimal results have been examined in detail by a number of authors (Heneman and Schwab, 1972; Mitchell, 1972; Wahba and House, 1972), and a number of ideas have been advanced for clarifying theoretical and methodological problems and thus improving study results. Some of these ideas are tested in this study. The goal in doing this was to increase the accuracy of retirement decision predictions and to test the potential usefulness of expectancy theory for practical applications.

To apply the expectancy theory framework to the practical task of predicting early retirement decisions, we formulated a role-choice model. Using the responses of each subject, a prediction was made of his retirement/non-retirement decision; subsequently the model's accuracy was validated by comparing subjects' actual status with predicted status. To our knowledge, this is a unique application in a field study since expectancy theory has not been employed previously to make actual predictions of the decisions of specific individuals based upon their responses to a questionnaire, although this use is implicit in the theory.

The subjects of the study are officers of the Regular Navy who become eligible after twenty years of service for one of the oldest and most liberal early retirement programs in the U.S. These subjects are on the average some fifteen years younger

than most early retirees in industry, and most move rather directly from retirement to a second career. Given our theoretical perspective, however, we assume that the decision process is similar for these subjects and older workers facing an early retirement decision.

The naval officers proved to be an almost ideal sample. The group is extremely homogeneous in many respects---age, education, income, family status, health, etc. Consequently, when one compares sub-samples (e.g., retired with active), the homogeneity tends to reduce unwanted effects due to extraneous variables.

Another advantage was the ability and willingness of these subjects to read and comprehend complex instructions and concepts, to analyze their own attitudes and perceptions relating to these concepts, and to respond quickly and completely. This ability and willingness was shown by a seventy-four percent return of the mailed questionnaire in less than two months with an extremely small proportion which were unusable. The cooperation given by the Navy itself in the form of information about the retirement system, assistance with sample selection, and opportunities to interview a broad cross-section of potential retirees was yet another advantage of this sample.

The results of the study are encouraging. Although the level of predictive accuracy was not as high as would be desirable,

some of the theoretical discoveries made show promise of increased accuracy in future applications. Further, it is believed that a number of the findings will further the understanding of strengths and weaknesses of expectancy theory and its suitability as a predictor of work-related behavior.

Chapter II discusses early retirement, compares it to other work-related behavior, and suggests a theoretical approach for the study. Chapter III discusses expectancy theory, describes the extended role-choice model formulated for this study and states hypotheses to be tested. In Chapter IV, the research design and methodology are set forth. Chapter V describes the results of the study and is followed by a summary, conclusions, and recommendations for further research in Chapter VI.

CHAPTER II

EARLY RETIREMENT: A REVIEW OF THE LITERATURE AND A COMPARISON WITH OTHER BEHAVIOR

Early Retirement: A Growing Form of Turnover

Within the last ten years, there has been a substantial increase in employee turnover due to increased participation in early retirement plans (Meyer and Fox, 1971). Relatively little attention has been given to this phenomenon, however, and few include the costs and implications of early retirement when discussing the impact of turnover on organizations.

In discussing early retirement, one must take care to define exactly what the term means. As the term has been used most frequently, it describes any person retiring before age sixty-five. Usually no distinction is made between early retirement which is due to employer workforce control measures, the worker's poor health, or purely voluntary reasons. Consequently, persons described as having retired early can be very different. One may be age sixty-four, ill and have no capacity nor desire for further work, while another may be a vigorous professional athlete or member of the armed forces in his late-thirties about to embark on a second career in which he will work twenty-five or more years.

There are several categories of early retirement; the more commonly delineated are the following:

Involuntary Retirement. The usual reasons for this are (1) declining performance by the individual as in the case of an aging athlete; (2) the employer's desire to make room to allow promotion of younger people, for example by retiring military officers not selected for promotion; or (3) as a means of workforce reduction during periods of economic decline.

Disability Retirement. This form of retirement gives the employer a means of releasing persons not physically capable of performing their jobs and at least partially compensates the retiree for the disability he has incurred.

Voluntary Retirement. Of primary interest in this study, this category includes those who, having completed specified age and/or service requirements, choose to withdraw and receive their retirement pension or annuity. Sometimes included in this category is the sub-group of those who, although not retired for disability reasons, have subjectively evaluated themselves as being physically unsuited for continuation in the same work and have chosen to retire under the conditions applicable to other voluntary retirees.

For the voluntary early retiree, particularly those who are not disabled, it would be a mistake to assume that retirement means the end of their gainful employment. For many, early retirement whether voluntary or not is the gateway to another job or career.

Early Retirement Programs.

The most visible early retirement plan in the American labor market until recently was that of the armed services where, after World War II, retirement eligibility after twenty years' active duty became common (Assistant Secretary of Defense, 1973). Because of the relative youth and family obligations of most military retirees, they find a second career an economic necessity. Sharp and Biderman (1966)

found that 83 percent of their retired military respondents contemplated immediate re-entry into the labor market. An additional 13 percent expected to seek employment following a period of rest. Public safety personnel such as policemen and firemen are another occupational group among whom early retirement is common. Here, too, immediate entry into a second career is the usual practice.

In recent years, industrial early retirement programs have also increased, although retirement under these plans is not usually as early as that of military and public safety personnel. This too is changing, however, as shown by the maritime industry where retirement is now possible after twenty years of service (Faltermayer, 1965).

A 1971 Conference Board study found that 96 percent of the 841 plans surveyed had an early retirement provision. Most set a minimum retirement age of fifty-five or higher. Perhaps the early retirement program which has received the most attention is that of the United Auto Workers whose recent contract negotiations resulted in assured retirement after thirty years service, regardless of age, and pensions which will rise to as much as $700 per month (Bureau of National Affairs, 1973). Early retirement programs are also found in the steel, rubber, oil, coal, and trucking industries (Collings, 1969; Meyer and Fox, 1971).

Early Retirement Research

Two descriptive summaries of early retirement plans in private industry have been published within the last five years. Greene, Pyron, Manion and Winklevoss (1969), conducted a survey designed to give

an overview of policies and provisions of early retirement plans in private companies throughout the United States. Also investigated were the general welfare of early retirees and the relationship between retirees' plans for retirement and their post-retirement adjustment. Their findings showed that of the 201 companies, 93 percent had early retirement programs for both hourly and salaried workers. Forty-eight percent of the salaried and 46 percent of the hourly workers chose the option of retiring early (Greene, et al, 1969).

In summary, this research revealed that almost all companies surveyed provide an early retirement option, an increasing number of workers are electing the option, the majority of companies surveyed neither encourage nor discourage early retirement, and unlike the Armed Services few of the companies use early retirement as a means of workforce control. As for the physical, psychological, and economic status of the more than one thousand early retirees studied, the authors conclude that the majority elected early retirement voluntarily because they preferred a life of leisure instead of additional work. The retirees were found to be healthy and psychologically, socially and financially secure (Greene, et al, 1969).

In 1971 Mitchell Meyer and Harland Fox authored a Conference Board Report entitled Early Retirement Programs (1971). Their effort was undertaken to provide an update on the status of private pension plans and to describe developments which had occurred since the early nineteen-sixties.

Among the potentially important changes which had occurred were the increase in early retirement plans and the option granted to retirees of accepting a reduced Social Security annuity at age sixty-two---granted to women in 1956 and to men in 1961 (Meyer and Fox, 1971).

Their other major findings parallel those of Greene, et al (1969). The early retirement option (before age sixty-five) has become almost universal; 96 percent of the 841 pension plans surveyed had such a provision. Age requirements changed little during the 1960's. Age fifty-five was the most common eligibility point, with sixty being the next most common. Among the organizations surveyed, about 10 percent of each year's retirements involved people less than sixty-five. Meyer and Fox report a definite relationship between benefit level and early retirement rate---which is to say that among companies providing a liberalized retirement benefit, early retirement becomes more common. They conclude that the trend toward early retirement is increasing both in the number of companies offering the earlier option and in the proportion of workers choosing to accept it (Meyer and Fox, 1971).

Although these studies give a valuable picture of trends in early retirement programs, they tell us little about individual motivation to retire---only that increases in benefits increase early retirement rates. This may reflect no change in the motivation to retire at all. Perhaps it only indicates that for people already motivated toward turnover, this action has now become economically feasible. This is acknowledged by Greene, et al (1969) who advocate study

and analysis of factors contributing to voluntary and involuntary retirement. Two other studies have addressed this issue to some extent.

Behavioral Studies of Early Retirement

Pollman, in a study of early retirement among blue-collar auto workers, examined the relationship of life satisfaction to early retirement, based upon a presumed connection between general life satisfaction and job satisfaction. He hypothesized that early retirees would exhibit higher life satisfaction than those who continued to work (1969). He also theorized that life satisfaction among retirees from more highly skilled jobs would be greater. The results of this study, based upon a Life Satisfaction Index (LSI) administered to both early retirees and current auto industry workers eligible for retirement, supported the hypotheses to the extent that the predicted differences in LSI scores were found.

Early retirees, in contrast to those who continued to work, had a significantly higher proportion of "high" life satisfaction classifications. Highly skilled workers also exhibited the highest degree of life satisfaction as had been expected. Another finding was that former assembly line workers had distinctly lower scores than men whose jobs had allowed greater control over the pace of their work. Pollman (1971) concluded that it is not only maladjusted and dissatisfied workers who are being lost to early retirement but also the more skilled and those having higher morale.

The foregoing results should be treated with some caution, however.

As Pollman himself notes (1971), the higher degree of satisfaction among more skilled workers may be related to factors other than self-controlled work pace such as greater training, higher retirement income or lesser difficulty in accomplishing a self-controlled job. Second, although no differences were found in life satisfaction scores based upon length of retirement, life satisfaction may improve after retirement. This study also does not provide an explanation for the individual differences of the sizable proportion of employed men exhibiting high LSI scores (34%) or the early retirees with low LSI scores (12%). Moreover, all respondents were blue collar union members in or retired from the auto industry. Considering the findings of retirement differences among job status levels and settings (Blood and Hulin, 1967), and the high levels of stress and other conditions unique to the auto industry, (Blauner, 1964), these findings may not be applicable to other settings.

Pollman (1969) also asked retirees to list their most important reasons for retiring. The leading reason given was economic. He concludes that over 47 percent retired because a sufficient retirement income was available. Poor health and the desire for more free time were listed by 25 percent and 20 percent respectively, as the primary reason for their retirement.

The second study of early retirement was done by Barfield and Morgan (1969) under the sponsorship of the University of Michigan's Institute for Social Research. The researchers investigated factors affecting early retirement decision-making. Early retirement was

defined as any occurring before age sixty-five. They focused "on finding those factors which are important for the decision to retire voluntarily..." because a study of "the circumstances that favor or oppose early retirement is greatly needed in order to predict future trends and to assess their impact on the economy and the well-being of millions of people" (p. 2). Factors included were attitudes toward employment, evaluation of conditions expected under retirement including income and attitude toward leisure, supplemented by a survey of actual conditions and attitudes among retirees. The study included two distinct samples--- auto workers nearing age 60 and attainment of early retirement eligibility, and a representative sample of the entire U.S. population, covering different age, occupation, and income ranges.

The following major findings were reported:

A. For both samples:

(1) Although both situational and attitudinal factors were expected to be important factors in the decision to retire early, financial factors, primarily expected retirement income, were of prime importance with "attitudinal variables having less influence, though usually operating in expected directions" (p. 3).

(2) People subjectively viewing their health as declining expressed plans for earlier retirement.

(3) Other situational variables showed little correlation with plans for retirement.

B. National Sample:

(1) Those with active plans to pursue post-retirement activities such as hobbies and travel were more responsive to early retirement.

(2) Those who desired a second career and those expressing dissatisfaction with the present career also saw themselves as more likely to retire at the earliest opportunity.

(3) Age was negatively related to plans for early retirement,

supporting previous findings that older workers show higher job satisfaction and that those closest to retirement are least likely to favor it.

C. For retired auto workers, factors other than economic, including job satisfaction, ease of work, supervision, repetitiveness of work, or control over work were not related to the early retirement decision.

Two years after the original study, 943 of the respondents were recontacted with these results (Barfield, 1970):

A. A large proportion of those who previously reported early retirement plans had retired early.

B. For people still working, similar factors were found to be related to early retirement plans---expectations of adequate retirement income; perception of poor health; and job dissatisfaction. About one-quarter expressed early retirement plans.

C. "Taking all persons with whom contact was re-established in 1969 and deriving a measure of...propensity to retire from information obtained during the five-year course of the study, strong confirmation was obtained for...the primary importance of financial factors (mainly retirement income) for the retirement decision" (p. 1).

D. Income from assets and number of dependents made no difference in propensity to retire. With retirement income and mortgage status controlled, education and race were also unimportant, as were job repetitiousness and pleasantness or unpleasantness of work surroundings. Finally, attendance at retirement preparation classes seemingly had no effect.

Barfield (1970) concludes that:

> "...utilizing evidence of response to early retirement collected over a period of several years...the central conclusion about the retirement decision-making process inferred from earlier segments of the overall study remains unshaken: people retire (or plan to retire) early when they feel financially able to do so, and little, if anything, else matters" (pp. 30-31).

Applicability of Early Retirement Studies

How relevant the findings of Pollman (1969, 1971), Barfield and Morgan (1969), and Barfield (1970) are to other early retirement settings is difficult to assess. Our ability to generalize Pollman's results is hampered by the age and occupational restrictions of his sample; the same is true of the UAW portion of the Barfield and Morgan and Barfield studies. Of the national sample findings presented by Barfield and Morgan, one must be wary because they represent opinions about behavior rather than the behavior itself. Thus, although these studies are a source of potentially fruitful hypotheses, and must be considered important because they represent the only known empirical data on the subject, their generality must be regarded as an open question.

Another factor limiting the usefulness of these studies is the kind of information they contain. They provide a descriptive picture of early retirees, telling us in aggregate terms about their characteristics and opinions. They are inadequate, however, if one desires to predict whether or not a particular individual will or will not elect an early retirement option. For practical reasons, it would be helpful if we could accurately predict this decision. Perhaps more important, the ability to predict with consistent accuracy would be evidence of our having achieved a clearer understanding of the components and the process by which the decision is made, a major goal in industrial psychology. This issue will be discussed in greater detail following a discussion of early retirement as it applies to

people included in this study, retired and active duty naval officers.

History of Military Retirement

Collings (1969) traces the evolution of military retirement through several stages. His data suggest that significant changes usually occur during or shortly after major wars, in response to existing manpower problems. In these developments we see a gradual emergence of the philosophy and practices which constitute the present system. The following are key developments (Collings, 1969):

> Revolutionary War: During the war officers were promised a pension if they would stay on until war's end. One half pay for life for veterans disabled in battle was also initiated in this era (p. 7).
>
> Civil War Era: The principle of "physical incapacity due to age" was evolved in this period to rid the military of personnel who, having served for 30 to 50 years were "simply too old to fight a vigorous war." Out of this 'physical incapacity based on age' concept grew 'length of service' retirement and pensions, the basis of today's system (p. 8).
>
> 1880-1940: About 1883, 30 year retirement was started and emphasis changed gradually from age to length of service as the retirement criterion. Mandatory retirement for failure to be promoted was commenced by the Navy in 1899---a practice which continues to the present. Faced with an excessive number of senior officers who were retarding the promotion opportunity for more junior officers following World War I, early retirement was approved for some officers having as little as fifteen years of service. This practice was terminated during the buildup of World War II, but has been used subsequently in several variations, although retirement below the twenty year service mark has not been employed. (p. 9).
>
> Post World War II: The current retirement practices are based upon laws passed between 1946 and 1949 (p. 9). In 1957 military retirees became eligible for coverage under the Social Security System (Assistant Secretary of Defense, 1973, p. 4).

Collings says "Obviously military retirement for length of service was designed at first to get rid of 'old fogies' and let the young advance" (p. 9). This policy still exists. A recent report to the President by the Interagency Committee formed to study Uniformed Services Retirement and Survivors Benefits (1971) gives the following rationale for the evolution of the present retirement system: "[it] occurred largely because of the policy of staffing the force with young men and separating them at an early age to assure a physically vigorous force" (p. I-1).

The Current Military Retirement System[1]

The military retirement system operates under a rather complex combination of laws, regulations, and practices involving three separate but interrelated systems---(1) Reserve retirement, (2) Disability retirement, and (3) Voluntary retirement (Interagency Committee, vol. I, 1971). The decision by Regular naval officers to participate or not to participate in the last of these, voluntary retirement, is the focus in this study.

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1. In the following section, every effort has been made to portray the military retirement system as accurately as possible. It should be noted, however, that laws applying to different services are not always the same; further, practices and policies within services differ. Policies and laws applying to enlisted personnel sometimes differ from those applying to officers, and many special categories exist within each group. Consequently, while no factual errors are believed to exist in this section, many exceptions to statements made could no doubt be found. Where specific examples are needed, they have been chosen from among the study population with which this study is concerned, officers of the Regular Navy.

Under presently existing practices, military personnel first become eligible for voluntary retirement after twenty years of active service.[2] Thirty-seven is thus the earliest eligibility age, but most officer retirees are in their mid-forties (Collings, 1969). Retirement pay for twenty years of service is 50 percent of the individual's active duty base pay at retirement, increasing $2\frac{1}{2}$ percent per year to a maximum of 75 percent at thirty years (Quadrennial Review, vol. IV, 1969). Base pay does not constitute the total pay received by an active duty member, however. He receives non-taxable subsistance and housing allowances, and some receive additional allowances such as proficiency pay for critical skills, professional pay (for doctors and dentists), or hazardous duty pay. Consequently, retirement pay is always less than 50 percent of total pre-retirement pay and, depending upon individual circumstances, can be nearer to one-third (Quadrennial Review, vol. IV, 1969, pp. 2-6).

Although military personnel become eligible to retire after twenty years, continuation beyond that point is partly dependent upon the individual's personal desires and partly upon personnel requirements of the organization. Final approval rests with the organization which can and sometimes does use approval, disapproval, and forced retirement as a personnel management tool (Interagency Committee Report, 1971; Quadrennial Review, vol. IV, 1969). This accounts for the policy of mandatory retirement after a given number of years for officers who

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2. The eligibility for retirement after 20 years of service has come about largely through custom and usage rather than by specific provision of law (Quadrennial Review, vol. IV, 1969, pp. S-6).

have not been promoted. For some who possess urgently needed skills, however, retirement may be postponed by the organization, or policies may be enacted which delay or discourage early retirement. In response to a shortage of officers in a critical specialty, for example, it may be required that those selected for promotion agree not to retire for a certain period or forego the promotion. A recent instance (Chief of Naval Personnel, 1973) excepted Captains and Commanders of the Judge Advocate General Corps and Engineering Duty Officers from the rule that officers otherwise eligible can retire after six months in grade.

For most military personnel, there is considerable latitude in their selection of a retirement point between the twenty and thirty year service marks. All except generals and admirals are normally retired after thirty years service, and nearly all personnel are retired before reaching age sixty. The Report of the First Quadrennial Review of Military Compensation (Vol. IV, 1969) shows, for example, that of those completing 20 years of active duty, 84.6 percent of officers and 99 percent of enlisted personnel will retire before completing 30 years of service. Using the generally accepted definition that early retirement is that which occurs before age sixty-five, (Meyer and Fox, 1971), virtually all military personnel retire early.

The military retirement system is supported by the federal government. Members do not contribute directly, although their pay levels are intentionally set at a reduced level in consideration of the cost of the retirement system (House of Representatives, Committee on Armed Services, Report No. 549, 89th Congress, cited in Quadrennial

Review, vol. IV, 1969). Accordingly, it is similar to a program in which both employer and employee contribute, except that there is no vesting prior to retirement eligibility at the twenty year point.

Benefits and Restrictions: Other benefits of the military retirement system include the following: (1) Medical care for retiree and dependents, (2) Shopping privileges at military facilities, (3) Social Security benefits without loss of retirement pay, and (4) Optional widow's benefit if the retiree elects an actuarial reduction in retirement benefits (Navy Guide for Retired Personnel, 1970).

Military retirees face a number of unique restrictions and conditions of retirement. The most restrictive of these is that some may, under specified conditions, be recalled to active duty. Other regulations restrict post-retirement employment. For example, a retired Regular Officer may not sell or contract to sell materials to the government for three years following retirement. Retirees may not represent foreign governments, except in very limited ways; and, in the case of retired Regular Officers there is a limitation on the retired pay they may receive if they accept government employment (Navy Guide for Retired Personnel, 1970).

Many have assumed that military retirees are in an uncommonly advantageous position financially because of their retirement pay, civilian pay, and benefits. Research results suggest that these advantages are often less than assumed. Sharp and Biderman (1966) discovered that, on the average, military retirees earned only about one thousand dollars per year more following retirement than they

had received while on active duty. It should be noted however, that the variance is relatively large, and a number of other factors such as rank held at retirement and educational achievement are closely related to post-retirement income (Sharp and Biderman, 1966). For this reason, it is almost as difficult to generalize across the population of military retirees as it is for early retirees in general.

Extent of Military Retirement

Government officials are concerned with military retirement for two reasons: (1) its steadily increasing cost, and (2) the belief that the current system encourages early retirement among some people whose further service is in the best interest of the organization. (Quadrennial Review, vol. IV, 1969; DOD Retirement Study Group, 1972).

The high and always increasing cost of the system is well documented. The annual cost of the total military retirement system in fiscal year 1969 was $2.45 billion (Quadrennial Review, vol. IV, 1969). This is predicted to increase to $7.8 billion, $13.5 billion and $21.3 billion in 1980, 1990, and 2000 respectively (DOD Retirement Study Group, 1972). Of these amounts $3.03 billion, $8.39 billion and $16.06 billion respectively will go to non-disability retirees (Interagency Committee, 1971). The retired population was predicted to increase from 687,637 in 1969 to 1,241,004 in 1980 to 1,587,579 in 2000 and level off thereafter. The figure for the year 2000 represents a 131 percent increase over 1969 (Quadrennial Review, vol. IV, 1969, p. 2-29).

Analysis of the military retirement system has convinced officials

of the Department of Defense that the system is not performing efficiently its primary goal of attracting and retaining the kinds and numbers of personnel needed. These officials concluded that "the present system provides little or no incentive for a member to remain for a full career of 30 or more years" (Interagency Committee, 1971, pp. 1-4), and that the system handicaps management in its ability to remove members short of retirement eligibility, reduces its effectiveness in selectively retaining members beyond retirement eligibility, and that it motivates early retirement.

Two other opinions relating to the system are the following:

> (1) The present retirement system exerts an increasingly strong retention effect on members as they approach 20 year retirement eligibility. However, the existing combinations of military active duty pay, military retired pay and second career opportunities and incomes tends to motivate voluntary retirement from the military organization soon after eligibility is achieved (Quadrennial Review, vol. IV, 1969, p. S-5).

> (2) Loss rates also indicate that at 20 years of service the incentive value of the retirement system for continued service rapidly decreases. Particularly for those with marketable skills, the combination of military retired pay and second career income will be greater than what the individual can expect to receive as active duty compensation. The result of this push-pull phenomenon is that the manager loses some personnel that he would prefer to retain (DOD Retirement Study Group, 1972, p. 19).

Table 1 shows predicted retention and retirement patterns for personnel completing at least 20 years of service (Quadrennial Review, vol. IV, 1969).

Table 1: Retention and Retirement Patterns*

Cumulative percentage of those completing 20 years of service who will leave active duty before completing stated years of service.

Years of Service	Officer	Enlisted
21	22.5	46.3
23	55.2	71.9
25	66.4	82.0
27	74.6	87.7
29	80.9	91.6
30	84.6	99.0

Source: Quadrennial Review, vol. IV, 1969.

* Data are based upon fiscal year 1963, 1964, and 1965 retention, retirement and loss experience.

The focus of the government reports cited throughout this discussion of military retirement is economic since the authors were, by directive, concerned primarily with cost. It should be noted, however, that the reports provide no data to support their assumption that the major determinant of retirement motivation is economic. Whether this assumption is empirically derived is not known.

Research Issues of Early Retirement

The issues and studies discussed to this point suggest that the motivations of the early retiree are not well understood. The purpose of this research is to examine this issue. Of particular interest is a greater understanding of the psychological variables in the decision process. Our goal is to provide a conceptual and theoretical

framework within which studies of other populations of early retirees can be accommodated. The focus will be the individual. We will employ a well-established theory of motivation and attempt to identify some of the important factors which affect the retirement decision; following this, the applicability of this model will be tested and its value will be compared to a more traditional approach to behavior prediction.

The most difficult problem in dealing with early retirement as a motivational phenomenon is the lack of previous work in the area. The major theoretical need at this point is a framework or model which can suggest and order the major variables influencing this behavior. Some tentative guidelines can be derived from the work of theorists and empiricists interested in work motivation.

A Research Perspective

Selecting a Research Perspective

In a discussion of the application of the scientific method to the study of behavior, Kurtz (1965) says: "In undertaking an analysis of scientific method, it is well to have at the outset a clear understanding of the objectives of science.... Science seeks to develop general principles (theories and laws) that enable us to explain, predict, and control observable phenomena." [italics mine] Although the early retirement research discussed earlier in the paper has taken us some distance into the explanation stage, it does not permit us to predict. An effort to attain the knowledge and understanding necessary to permit accurate prediction of this behavior thus becomes the

next logical goal. To be of maximum usefulness, this research should employ a model capable of predicting and explaining the early retirement decision and the motivational components of the decision. The goal is to identify factors which influence retirement decisions in general and to learn more about how the decision occurs.

An Appropriate Model

Mobley (1971) argues in his study of work motivation and performance that theoretical models are essential to the study of industrial-organizational psychology. If we do not control our research through the use of the conceptual interconnectedness of a model, he believes, we will fall into the trap of collecting increasing quantities of empirical data which will overwhelm us with data but bring no greater understanding.

He quotes Guion and Gottier (1965):

> It must be admitted that industrial psychology lacks a general theory of work; it lacks a more specific theory of the relationship of motivational constructs to the behavior of an individual at his job; and it lacks even a substantial body of research explicitly aimed toward the development of such theories. In this vacuum, it is no wonder that raw empiricism is still an essential ingredient in practical personnel research. If the problem lies in the lack of relevance of existing theories, then the solution must surely lie in the design of research that will lead to a relevant theory (p. 158-159).

In his discussion of the utility of models, Mobley (1971) also emphasizes a point made originally by Cofer and Appley: if one finds available models wanting, he should try to construct one (Cofer and Appley, 1964, cited in Mobley, 1971). When attempting to predict

early retirement or motivation toward early retirement, this is particularly good advice because no appropriate model exists. If we are to study early retirement as motivated behavior, while avoiding the temptation of only collecting further empirical data, the most promising approach seems to be the design of a model which incorporates (1) what we already know about the behavior under study and (2) the experience accumulated by others using models which have shown utility for studying similar behavior.

Models of Turnover

According to Forrest, Cummings, and Johnson (1973), much of the turnover research has been fragmented because of the use of discipline-specific job mobility paradigms. Economists, according to these writers, have employed a utility maximization model, derived from basic economic theory and employing macro-oriented economic variables. Psychologists, on the other hand, have used a paradigm growing out of the Stimulus-Response tradition in psychology, resulting in primary emphasis on the organization member's dissatisfaction with his present situation. They maintain that neither approach is adequate by itself to explain turnover behavior because neither alone can take into account the pushes and pulls of economic, siutational and psychological factors.

Satisfaction and turnover: Probably the most frequently cited correlate of voluntary turnover is job satisfaction (March and Simon, 1958; Vroom, 1964; Porter and Steers, 1973). Vroom (1964) explains

this in terms of satisfaction increasing the force on an individual to remain on the job; job dissatisfaction is hypothesized as having the opposite effect. He cites seven studies of the satisfaction-turnover relationship. Although the magnitude and significance of findings vary, all report negative relationships between satisfaction and turnover.

Porter and Steers (1973) reviewed a wide range of studies concerned with the relationsnip of "organizational, work, and personal factors" to turnover and absenteeism. Their review of studies conducted mostly in the 1960's, leads them to conclude that previously reported relationships between job satisfaction and turnover (Brayfield and Crockett, 1955; Vroom, 1964; Hulin, 1966; Hulin, 1968) have been confirmed by researchers using predictive studies high in levels of methodological rigor and well designed instruments. Of the fifteen job satisfaction studies reviewed, they say "these newer studies go a long way in the direction of providing increased confidence in the importance of job satisfaction as a force in the decision to participate (Porter and Steers, 1973, p. 154)."

Porter and Steers (1973) also examined studies dealing with specific areas of dissatisfaction influencing turnover. They conclude that a wide range of variables are sometimes involved. These include (1) "organization-wide" variables (e.g., pay and promotion policies); (2) those unique to the immediate work group (e.g., unit size and co-worker relations); (3) job content variables such as the nature of the job; and (4) personal factors, for instance family considerations. Although less conclusively, they suggest that role clarity, recognition,

and feedback may also be inversely related to turnover.

Vroom (1964) suggests that the generally low magnitude of correlations found is explained by the fact that turnover is more complex than the simple "dissatisfaction equals turnover" model. Instead, it may involve both the positive and negative valences of the job the individual is leaving; valences of alternatives he is considering; the instrumentalities of each for achieving desirable outcomes or avoiding undesirable outcomes; and his expectancy that he will succeed in gaining the desired alternative. Studies of job satisfaction normally elicit responses concerning the job presently held. According to Vroom (1964), however, valences and expectations outside the present setting, for example job availability, must also be considered if we expect to predict turnover successfully.

Forces toward turnover: Vroom (1964) says that the probability that an employee will leave is determined by the relative strength of two forces---those acting on him to remain and those acting on him to leave. In a similar vein, March and Simon (1958) have suggested factors affecting the perceived desirability and ease of turnover. Job satisfaction; conformity of the job characteristics to the individual's self-characterization; predictability of instrumental relationships on the job; compatibility of work requirements with the requirements of other roles; consistency of supervisory practices; and amount of rewards are mentioned. They believe that when combined these factors result in the individual's perception of ease of movement and the desirability of doing so, which constitutes his

"inducement-contribution utility balance"(Forrest, Cummings, Johnson, 1973). The ease of movement concept is especially interesting because it may have a potential for explaining differing turnover rates noted under different economic and labor market conditions. Although empirical data are not presented, these notions do not seem inconsistent with known studies of turnover and theories of social comparison (Thibaut and Kelley, 1959).

Economic and labor market variables: There is a good deal of evidence showing that employee turnover rates are affected by economic and labor market variables. For example, Stoikov and Raimon (1968) report that when economic conditions are good, monetary rewards have a sizeable effect on quit rates. Burton and Parker (1969) found a negative relationship between turnover and the unemployment rate, and Forrest, Cummings, and Johnson (1973) have summarized a wide range of economic variables found to have a relationship to turnover.

It appears that beliefs relating to turnover of industrial psychologists and economists are not necessarily always different. They may be more a matter of difference in focus, the variables of interest, and level of analysis. Economists are generally more concerned with labor market analysis and with gross predictions of aggregate human behavior (Rottenberg, 1956), while psychologists have as their goal explanation, prediction and control of specific individuals. To us, it seems important to be able to consider the impact of both kinds of variables in any model of turnover.

Forrest, Cummings, and Johnson (1973) argue this need in setting forth reasons for their development of an integrative model of job choice behavior. Their major reason for believing such a model is needed is that

> Within any single study [of turnover] only a limited number of the potentially appropriate variables have been analyzed. Economists have considered industry data while psychologists have focused on individual behavior. The mixture of levels of analysis between the two disciplines has clouded the issue of individual job turnover behavior rather than clarified it (p. 11).

> Numerous problems exist in current theory and research on job turnover and job choice. The theoretical statements and empirical research have been discipline-bound. Appropriate variables have consistently been ignored and process models have been neglected. The turnover criterion itself has been ill-conceived, inconsistently measured, and negatively construed. Thus we feel that a motivational approach to this much-studied organizational phenomenon is needed (p. 11).

A Theoretical Approach

Expectancy or Instrumentality-Valence Theory is "perhaps the most widely accepted theory of work and motivation among today's industrial and organizational psychologists" (House and Wahba, 1972). The theory is based upon the concepts of expectancy or subjective probability, and valence, or anticipated value.

The three major concepts of expectancy theory, expectancy, valence, and instrumentality, have been defined as follows.

> Expectancy: An expectancy is...a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome. Expectancies may be described in terms of

> strength. Maximal strength is indicated by subjective certainty that the act <u>will</u> be followed by the outcomes while minimal (or zero) strength is indicated by subjective certainty that the act <u>will not</u> be followed by the outcome.... Expectancy is an action-outcome association (Vroom, 1964).
>
> <u>Valence</u>: Refers "to affective orientations toward particular outcomes. An outcome is positively valent when the person prefers attaining it to not attaining it...has a valence of zero when the person is indifferent to attaining it or not attaining it..., it is negatively valent when he prefers not attaining it to attaining it (Vroom, 1964, p. 15)."
>
> <u>Instrumentality</u>: "Instrumentality...is an outcome-outcome association (Vroom, 1964, p. 18)." Consequently, the instrumentality of an act, performance, role-occupancy, etc. is "negative when it helps avoid an outcome and positive when it helps attain an outcome (Wahba and House, 1972, p. 20)."

An outgrowth of the doctrine of hedonism, expectancy theory is an ahistorical cognitive theory, holding that people tend to move toward pleasure and away from pain. Present models applicable to work-related behavior originated with the formulation of Vroom (1964) whose model is based upon the earlier work of Lewin and Tolman (Campbell, Dunnette, Lawler and Weick, 1970; Mobley, 1971).

Expectancy Theory holds that behavior can be predicted on the basis of the valences people attach to specific outcomes and their subjective assessment of the probability of their attaining the outcomes. Behaviors which the theory has been used to predict include job effort and job performance; job satisfaction; organizational practices; managerial motivation; importance of pay and pay effectiveness; leadership behavior; leader effectiveness; and occupational choice (Wahba and House, 1972). Vroom (1964) says the theory can also be used to explain morale, need achievement, group cohesiveness,

motivation for effective performance, and occupational preference. Both Galbraith and Cummings, (1967) and Graen (1969) point out the utility of this theoretical approach for dealing with choices among alternatives.[3]

This review suggests that expectancy theory should be useful as the basis for a model of turnover. This argument has also been advanced by Forrest, Cummings and Johnson (1973). In view of the similarities between job turnover and voluntary early retirement, such a model may also be useful for studying early retirement as well. For example, the early retirement decision represents a mutually exclusive choice between alternatives. It can presumably be occasioned by attraction toward a more desirable alternative, avoidance of a less desirable alternative, or perhaps more likely, a combination of the two. Thus, from the standpoint of the individual concerned, the dominant characteristic of a voluntary retirement decision is choice. These features are also common to the phenomenon of job separation or turnover; in fact, where retirement is voluntary, it may be considered a subset of job turnover behavior.

The Usefulness of Expectancy Theory in Job Choice and Turnover

In this section seven studies employing expectancy theory or a similar model to study job preference, job choice, or turnover are discussed.

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3. See Mitchell and Biglan (1971); Mobley (1971); Heneman and Schwab (1972) for more complete discussions of expectancy theory, its applications and empirical results.

Job Preference

A. Sheard (1970) employed an expectancy theory model based upon Vroom's (1964) formulation to test his ability to predict college students' preferences for type organization in which they would like to work. By multiplying each student's importance (valence) ratings for each of twenty work goals by his attainability (instrumentality) rating for each goal, and summing these products, he achieved intra-subject correlations ranging from .777 to .821 between the predictor score and organizational preference. Correlations from .756 to .807 were obtained using the sum of attainability (instrumentality) ratings alone. The latter correlations although slightly lower in all cases were not significantly different from those including valence as well. Perhaps the most important point is that both methods explain in excess of 57% of the variance in the individual's occupational preferences.

In discussing the small difference in variance explained between the multiplicative model and the simpler one which leaves out valence, Sheard speculates that this may be the result of his student subjects not having clearly established and well-integrated preferences among the work-goals he employed in the study. He suggests, however, that the simpler model may also be the correct one and suggests that future research be conducted to test the instrumentality-goal hypothesis in other organizational choice situations.

B. Mitchell and Knudsen (1973) explored the applicability of an expectancy theory choice model in a study of occupational preferences

and choices among college students. Their study tests several questions growing out of Vroom's (1964) theoretical statements and subsequent tests of his models. Taking note of the distinction Vroom made between one's evaluation of an occupation (an attitude) and his occupational choice (a behavioral decision) Mitchell and Knudsen tested their model using two criteria, attitude toward business (the evaluation) and occupational choice (the behavioral decision).

They also extended Vroom's theory by distinguishing between intrinsic, extrinsic, and social motivators (outcomes), assessing for each subject the instrumentality and valence of a business career for achieving each of these three types of outcomes. Intrinsic motivators were defined as rewards one obtains just by doing a job (e.g., self-expression) and extrinsic motivators were those obtained from or mediated by the organization (wages, status, etc.) The third category, termed social outcomes, are those concerned with social issues, for instance wiping out poverty or eliminating racial prejudice. Yet another modification of the theory in this study was the inclusion of each subject's perceptions of the expectations of his peers and family, weighted by a measure of his motivation to comply with these expectations.

Mitchell and Knudsen hypothesized that students' attitudes toward business and their choice of business as an occupation can be predicted by an additive model using three variables: (1) the sum of the products of the valence of each outcome times the instrumentality of a business occupation for achieving each outcome; (2) the product

of perceived peer expectations and motivation to comply with these expectations; and (3) a similar product for family expectations and motivation to comply. Hypotheses concerning the relative importance of intrinsic and extrinsically valent outcomes were also tested. Finally, it was hypothesized that the expectations of others would be more strongly related to occupational choice than to the person's attitude toward the occupation.

The results of this study show that the extended model did a good job of predicting attitude toward business ($r = .70$) and a relatively good job of predicting occupational choice ($r = .54$). For the attitude score, the sum of the products of valence and instrumentality explained almost all the variance; for predicting occupational choice, the instrumentality-valence component and family expectation components explained approximately equal amounts of variance. Of the three types of outcomes, the findings showed that the extrinsic outcomes contributed most to the total ΣIV score as the authors had expected.

In general, Mitchell and Knudsen concluded, these results provide considerable support for the use of expectancy theory to predict the evaluation of occupations and lesser but still creditable support for its ability to predict occupational choice. They also note consistent with Sheard's (1970) findings, that the instrumentality measure alone is almost as useful as the product of valence and instrumentality, but they argue that there is nonetheless good reason to retain the valence component in the model until further

evidence on this issue has been accumulated.

Job Choice

A. Huber, Daneshgar and Ford (1971) employed some components of an expectancy theory model in a study of job choice among teachers. Five competing utility models were compared. The one most resembling an expectancy theory model computed a utility score for a group of teaching jobs using anticipated satisfaction (valence) measures for each of five job factors with each factor weighted by its importance to the respondent. This model was superior to the other four non-expectancy models.

B. An early example of the usefulness of an expectancy theory model predicting job choice is Vroom's (1966) study of job choice among graduating masters degree candidates. Based upon their importance ratings of fifteen job goals (outcomes) and their instrumentality ratings of each of three organizations for attaining the goals, Vroom explained (after the fact) how well he could have predicted the individuals' job choices. In his words: "The choices of over three-quarters of the subjects could have been predicted before they were made from a rule which asserts that each would choose from among the organizations open to him the one with the highest instrumentality-goal score (p. 219)."

C. A 1966-1968 study of recruiting effectiveness at Corning Glass Works (Hundert, n.d.; Pieters, Hundert and Beer, 1968; Pieters, 1968) employed an expectancy model patterned after Vroom's (1966) study of job choice. Pieters (1968) summarizes the conceptual

purpose of the study as follows:

> ...to allow us to evaluate a psychological decision model as a predictor or organizational choice. The decision model specifically indicates that organizational choice is strictly an individual process based on the importance attached to a number of job offer characteristics and the individual's perception of the relative attractiveness of these characteristics in the various offers received. For each organization the individual weighs the attractiveness he perceives in the job characteristics by the importance he attaches to them and sums these values (psychologically---generally not explicitly) to arrive at what we call an Index of Attractiveness (IA). Having done this, the model predicts acceptance of the organization whose job offer has the highest IA " (Pieters, 1968, p. 4).[4]

The ability of the IA to predict correctly organizational choice was demonstrated twice. Pieters, Hundert and Beer (1968) report that of seventy-five subjects for whom an IA was computed for two organizations (one from whom a job offer had been accepted and another from whom an offer had been declined) the IA of the selected organization was higher for sixty-one subjects and the same for four others. Thus of the seventy-one cases in which a prediction was possible, 86 percent of the predictions were correct.

In a later use of the model, IA scores were computed for 108 job seekers (Pieters, 1968). Nine replies resulted in equal IA scores for each of the competing organizations. Of the remaining ninety-nine respondents, 92 percent chose the organization having the higher IA. Pieters (1968) concludes from these data that "The

4. A number of expectancy theory researchers have treated the terms importance and valence as synonymous. In this study, however, they are treated as being independent. It is believed that this raises an important conceptual issue which will be discussed in Chapter III.

tremendous consistency of the prediction model indicates very strongly that the organizational choice process is an individual process and must be approached as such (p. 5)."

Turnover

A. As part of a study to identify differences between matched groups of current employees and ex-employees who had voluntarily terminated their employment with a firm, Dunnette, Arvey and Banas (1973) constructed a motivation index score for each of 446 present employees and 483 ex-employees. Motivation index scores, ranging from 45 to 1124 points were computed using a summation of the product of importance (used here as a valence measure) times the instrumentality of the job for attaining the fifteen job outcomes employed, and the subject's estimate of whether or not effort on his part had led to recognition of his effectiveness (the expectancy measure); in short, Motivation Index (MI) = (V x I x E).

This approach to constructing a motivation index is subject to a number of problems. Nevertheless, some relationship was shown between it and resignation from the organization. For example, the group whose scores were above 900 had 24 percent of the continuing employees but only 10 percent of the ex-employees. The group scoring below 300 had 11 percent of the present employees but 33 percent of the ex-employees.

B. A study by Mitchell and Albright (1972) is especially relevant to the present study. The subjects were naval aviation officers and the dependent variable was the choice (self-report) of remaining in the

Navy versus leaving. Two models were tested---a job satisfaction model and a performance model; only the first is relevant to this discussion.

The job satisfaction model advances this hypothesis, taken originally from Graen (1969):

> The attraction of a work role for an individual depends on the perceived attraction of various role outcomes and the perceived instrumentality of that work role for the attainment of these various role outcomes.

From Graen's original statement, Mitchell and Albright derived three hypotheses:

> (1) The degree to which an individual is satisfied with his position and the Navy is a function of the product of the attraction of role-related outcomes and the instrumentality of the role for attaining the outcomes.
>
> (2) The degree to which an individual is satisfied with his position is more related to intrinsic than extrinsic outcomes.
>
> (3) The higher the amount of intrinsic satisfaction, the higher will be the expectation of remaining in the Navy.

The satisfaction and retention criteria were based upon self-report measures taken from a questionnaire.

Mitchell and Albright found support for their three hypotheses. They concluded that "...it is clear that satisfaction is more related to intrinsic outcomes than extrinsic ones" and that "these results imply that the choice between staying in or getting out of the Navy depends more upon:

1. Intrinsic satisfaction than extrinsic satisfaction.

2. Liking present position rather than liking the Navy (p. 12)."

An example of the magnitude of the relationship found is shown by the correlation (r) of 0.47 between total satisfaction as computed using the model and the measure of intention to remain in the Navy.

Summary of Expectancy Theory Research

Based upon the findings reported in the seven studies described above, it seems reasonable to make the following tentative conclusions regarding the employment of an expectancy theory model for predicting job preferences, job choices, and turnover.

(1) Although the evidence is not conclusive, it appears that models incorporating the valence of work-related outcomes in combination with the perceived instrumentality of given work roles for attaining these outcomes has potential for predicting choices among alternative jobs, occupations, or organizations.

(2) The expectancy theory model has demonstrated a potential for predicting the decision to leave an organization or an attitude conducive to leaving.

(3) While attitudes toward a job or occupation and choice of that occupation seemingly have common components, they are not always synonymous.

(4) Self-report measures have been relatively successful instruments for assessing perceptions needed to test predictive models of job-related attitudes and choice behavior.

The Use of an Expectancy Theory Model to Predict Early Retirement

Expectancy theory has not been employed previously to predict the choice to retire or not retire. It seems especially suited for studying this choice situation, however, based on the results of the studies discussed in the preceding section and the following characteristics of the retirement choice:

(1) Attainment of early retirement eligibility requires a choice even if it is only to maintain the status quo by taking no other action.

(2) The available alternatives are mutually exclusive.

(3) Due to the uncertainty surrounding future events, the basis for the decision must rely heavily upon individual perceptions and judgments.

The primary consequence of these factors is that if expectancy theory is valid, by knowing how an individual perceives the situation, assuming subjective rationality on his part and a knowledge of all relevant variables, his decision can be predicted.

In the next chapter we will describe an extension of Vroom's (1964) expectancy theory model of work motivation designed to predict whether an individual naval officer will elect to retire at or soon after becoming eligible for retirement, or whether he will choose to remain active in the naval service.

CHAPTER III

A MODIFIED MOTIVATIONAL MODEL FOR EXAMINING THE RETIREMENT DECISION, PROBLEMS TO BE DEALT WITH, AND HYPOTHESES TO BE TESTED

In this chapter we will describe a modification of the expectancy theory model of work motivation which will be used to study early retirement among naval officers. First, some issues which have resulted in conceptual and methodological ambiguity in earlier expectancy theory studies are discussed, and ways of avoiding them are examined. Second, hypotheses to be tested are outlined. These include hypotheses based on expectancy theory and an alternative approach to predicting early retirement which will be compared with expectancy theory.

Behavior to be Studied

The specific focus in this study is the choice of male Regular Navy Officers to retire early or to remain on active duty. To be included as subjects in the study, officers must have served at least the minimum of twenty years necessary to become eligible for voluntary retirement and not have been ruled ineligible for any other reason. Further, they must not have been involuntarily retired. This leaves as a study population only officers for whom the retirement decision is a voluntary one. Understanding more about this decision and factors which affect it are major purposes of the study.

Expectancy Theory Ambiguity

Before describing an extention of the model of work-related motivation, it is appropriate to discuss some sources of ambiguity in earlier expectancy theory motivational research and to consider ways of avoiding these difficulties and ways of clarifying some of the issues involved.

Although expectancy theory is suited conceptually to predicting choice behavior such as turnover or performance, as pointed out in the previous review, only nominal success has been achieved in many studies employing this cognitive framework (Mobley, 1971; Wahba and House, 1972; Heneman and Schwab, 1972). Wahba and House (1972) say:

> The magnitude of the support for the theory is inconsistent from study to study. ...It is discomforting to note that the levels of concurrent or predictive validity coefficients (usually in the form of multiple regression coefficients) range from .72 for predictions of job satisfaction...to as low as .11 for predictions of job performance...; in the majority of the studies, the coefficient is generally about .30 (pp. 2-3).

The presumed logical and methodological reasons for less than hoped for results from expectancy theory research have been dealt with at length (Mitchell, 1972; Mitchell and Biglan, 1971; Wahba and House, 1972; Heneman and Schwab, 1972), and a number of recommendations for improving results have been offered in the context of specific studies (Mitchell and Albright, 1972; Pritchard and DeLeo, 1973).

Some of these issues which are of direct concern in this study are discussed in the following paragraphs. Procedures used in the

present study to avoid possible pitfalls are also outlined here. These are then elaborated upon in the hypotheses which follow and in the following chapter where research design and methodological issues are discussed.

1. A within person measure: Vroom's (1964) discussion of his conceptual model indicates that the model is intra-individual. He says, for example, "We assume that the choices made by a person among alternative courses of action are lawfully related to psychological events occurring contemporaneously with the behavior (p. 14)." Notwithstanding this and similar statements by others (Mitchell, 1972), expectancy models have been employed in a number of instances to make predictions across people rather than within individuals. When within person behavioral predictions are to be made, individual response sets are not a significant problem because each person's responses relative to one alternative are compared only with his responses for another. A person who manifests a response set is likely to do so for each alternative. Consequently, the accuracy of the behavioral prediction is not affected.

When the theory is used to study behavior across people, however, the usual practice is to observe one behavior and test whether subjects who exhibited the behavior had higher force scores toward that behavior than subjects with lower scores (Mitchell, 1972). This procedure carries the implicit assumption that each individual whose expectancies and perceptions are of equal strength will respond in the same way to measurement scales designed to measure these perceptions. In

view of the amount of evidence showing that individual response sets cause subjects with similar feelings to respond differently (Guion, 1965; Nunnally, 1967), one must assume that across person tests of expectancy models are likely to show reduced accuracy through no theoretical fault of the model. In this study, a within person model is used.

2. The Criterion: According to Mitchell (1972), expectancy theory is capable of predicting "a person's intention to do something rather than the actual behavior." Mitchell believes that we should employ as a criterion a measure as close as possible to the person's intention rather than his behavior, because the latter may be blocked or altered by external forces which the industrial or organizational researcher can neither anticipate nor control.

While this approach is no doubt useful in some research situations, an argument can also be made for the importance of studying overt behaviors. First, when we use intentions as the dependent variable, we must rely on subjects to report correctly their intentions, and there is no independent means of verifying the accuracy of this report. Second, and perhaps more important, the ultimate goal of research in organizational and industrial psychology is to predict and/or explain behavior. Although intentions are an important component of this behavior, it is the behavior itself which must ultimately be dealt with, and it is incumbent upon us to work toward improved models capable of achieving this goal. It is thus believed that we should employ as a criterion behavior which is visible and straightforward

and that our models should be designed to account for any external forces which mediate between preference or intention and actual behavior. This is done in the present study.

3. Instrumentality: This component of the expectancy model has been defined and operationalized in quite different ways. According to Wahba and House (1972), the ambiguity of Vroom's definition of instrumentality is responsible for this because it leads others to ignore or confound the distinction between instrumentality and expectancy. Some of the differing interpretations which have resulted according to Wahba and House (1972) are (1) combining expectancies of first level outcomes (goals) and second level outcomes (rewards and punishments) to form a common index (Lawler and Porter, 1967; Hackman and Porter, 1968); (2) interpreting instrumentality as an expectancy (i.e., subjective probability) that performance leads to second level outcomes---for example, Heneman and Schwab (1972) refer to instrumentality as a "performance-reward probability (p. 5)"; and (3) linking first and second level outcomes by subjective probability estimates. Campbell, et al (1970) term this Expectancy II, and other writers who have used similar definitions are Graen (1969); House (1971); and Mitchell and Albright (1972). Wahba and House (1972) conclude that:

> "There are at least two prominent versions of the instrumentality concept; (1) Vroom's (1964) version which deals with instrumentality as a determinant of the valence of first level outcomes---ranging from -1 to +1 and (2) a more commonly operationalized version which does not deal with it as a determinant of valence but rather deals with it as an expectancy of second level outcomes. Consequently, predictions of the initial version of the theory

have not been tested with respect to Vroom's job satisfaction model or his job motivation model (p. 22)."

Recently, some authors have operationalized instrumentality more in accordance with this interpretation of Vroom's (1964) definition. Mitchell and Nebeker (1973) for example, define instrumentality as a relationship between performance and second-level outcomes, and it is operationalized by them in keeping with Vroom's statement that instrumentality can take on both positive and negative values. Virtually all earlier investigators have ignored this feature, leading Wahba and House (1972) to conclude that "the predictive power of negative instrumentality is not yet known and therefore the theory has not been adequately tested (p. 23)."

In this research, Vroom's (1964) formulation is followed. Instrumentalities of the retired and active duty roles (first level outcomes) for attaining or avoiding various rewards and punishments (second level outcomes) will be assessed separately. "Accordingly, the instrumentality...is negative when it helps avoid an outcome and positive when it helps attain an outcome (Wahba and House, 1972, p. 20)."

4. Outcomes included: A model based on expectancy theory is absolutely dependent upon the researcher's ability to select outcomes which are relevant to his subjects and to measure them accurately. In theory one should include a list as long as necessary to insure inclusion of all outcomes relevant to the population being studied. Mitchell (1972) however, cites evidence of one study where better predictions were achieved with a limited set of outcomes. In contrast,

Mobley (1971) achieved relatively good support for his model in one site using forty-five outcomes. Thus the issue of the relative effectiveness of larger or smaller numbers of outcomes remains unresolved.

A related issue is whether the predictive power of an expectancy model increases when negatively valent outcomes are included with the rewards customarily included. The need to do this has been noted (Hackman and Porter, 1968; Mitchell and Albright, 1972), but a survey of research conducted in the past shows that it has been done infrequently. Exceptions to this are Hackman and Porter (1968), Mobley (1971), and Pritchard and Sanders (1973).

In this study, outcomes believed to be most relevant to the subjects, both positively and negatively valent, are employed. Judgments concerning relevance were made on the basis of questionnaire pre-tests and interviews in which active and retired officers participated. The number of outcomes included represent a compromise; every effort was made to include those which are most relevant and important (Mitchell, 1972) while keeping the number small enough to avoid (1) a reduced response rate brought on by subjects' unwillingness to evaluate a larger number, or (2) a number so great that the model would become computationally awkward.

5. Valence vs. importance of outcomes: An issue which has received too little attention is the use of the terms valence and importance as if they are synonymous. Vroom (1964, p. 15) sets forth the concept of valence as "a person's desire for or attraction toward" an outcome and as an "affective orientation" toward an outcome.

Mitchell (1972) on the other hand seems to use the terms importance and valence interchangeably. Mitchell and Albright (1972) show a similar orientation in their statement, "The degree to which an individual is satisfied...is a...function of the products of the importance (attraction) of various intrinsic and extrinsic rewards..." (p. 4), and in their valence questions phrased "How important is this to me?" Similarly, Graen (1969) employed "An importance questionnaire" asking respondents to rate outcomes from "an unnecessary part..." to "an essential part of the job." He refers to this instrument in one place as an "importance" questionnaire, in another as an "attraction instrument" (1969, p. 7).

Particularly surprising is the fact that Vroom himself employed a measure of outcome importance as a component of an instrumentality goal-index (1966, p. 216). Sheard (1970) and Dunnette, Arvey, and Banas (1973) also used importance as a surrogate for valence.

Conceptually, however, valence or "affective orientation" (Vroom, 1964, p. 15) differs from importance. Among a large number of outcomes, some of the more trivial might be judged positively or negatively valent to a high degree but unimportant. For instance, the author would rate beauty in a female colleague as highly valent but relatively unimportant in comparison to her professional skills. Conversely, among blue-collar workers outcomes such as union membership could be very important but, in terms of valence, almost a matter of indifference. Or more money might be highly valent to a well-paid executive, but due to his tax bracket, the money could be relatively unimportant when compared to

other fringe benefits or perquisites not subject to taxation. For naval officers, foreign travel could be highly valent but relatively unimportant, while command of a ship may be very important for future promotions but of low positive or even negative valence.

The essence of this distinction is the nature of attraction as compared to importance. Our experience suggests that attraction or attractiveness can be judged to some degree in the absolute, but by its nature, importance suggests comparison. Valence can to some degree be scaled independently; before we can get most people to judge importance, however, we must specify importance in comparison to some other variable. Because the foregoing is based largely upon our own thinking, however, its validity remains an empirical question. It is interesting to note that Pritchard and DeLeo (1973) have reached a somewhat similar conclusion in noting that importance alone is insufficient as a measure of valence, and McLaughlin and Butler (1974) used anticipated satisfaction and importance as different concepts in a study of army officer retention. If this is true, these concepts may contribute separately to an expectancy model. Later in this chapter, we will hypothesize the form of these relationships.

6. Intrinsic vs. extrinsic outcomes: Mitchell and Albright (1972) reported that intrinsic outcomes are more important to a decision to remain in the Navy than are extrinsic outcomes. Considering the subject of the present study, this conclusion appears to have important implications. An attempt to determine which of a list of outcomes are intrinsic and which are extrinsic however, reveals that the distinction

is not always readily apparent.[1]

Although the terms intrinsic and extrinsic are used widely in the literature on job satisfaction and motivation, they are often left undefined, and different authors use them to mean different things; most seemingly subscribe to one of two meanings. The first definition originated in Herzberg's "two factor theory." Intrinsic factors were defined as those which flow from performance of the work itself, and extrinsic factors were believed to come from the work context or environment (House and Wigdor, 1967). Herzberg (1966, p. 76) believed that only intrinsic factors are inherently motivating because they contribute to psychological growth while extrinsic factors do not. Thus, his distinction seems to rest on the kinds of needs an outcome satisfies. Graen (1969) did not define his meaning of extrinsic and intrinsic, but examination of the outcomes he included in each category suggests that his definition, like Herzberg's, is based upon the kind of need satisfied. Although Herzberg's theory has been largely discredited (Vroom, 1964; House and Wigdor, 1967; Hinrichs, 1970; Miner and Dachler, 1973), the notion that intrinsic outcomes have greater motivational potential has continued (House, 1971).

1. As a test of the clarity of the intrinsic/extrinsic distinction, the author requested seven people familiar with industrial motivation theories to rate the twenty-five job-related outcomes employed in this study as intrinsically or extrinsically mediated, using the distinction made by Mitchell and Albright (1972). Complete agreement was achieved for only fourteen of the twenty-five; five were agreed to by six of the seven, three by five of the seven; and on three, there was a four to three split. For instance, "Opportunity for independent thought and action," which Mitchell and Albright (1972) considered an intrinsic outcome was judged an extrinsic outcome by four of the seven judges.

Galbraith and Cummings (1967), Campbell, et al (1970), Wahba and House (1972), and Mitchell and Albright (1972) use a different criterion to distinguish between intrinsic and extrinsic outcomes. They distinguish between those mediated within the individual and those that are externally mediated by the organization.

One is likely to classify the same set of outcomes differently depending upon which of these two definitions is used. For example, Graen (1969) considered "responsibility" to be an intrinsic outcome. Using the "who mediates" criterion, however, Mitchell and Albright (1972) categorized responsibility as an extrinsic outcome.[2]

The result of these different and often implicit definitions is confusion as to what an intrinsic or extrinsic outcome is--- whether the distinction is based upon the nature of the need satisfied or upon who administers the reward or punishment. The importance of a clear understanding of the definition being used can be appreciated by considering the Mitchell and Albright (1972) statement that intrinsic outcomes are more important for the retention decision of naval officers. Depending upon which of the foregoing definitions is employed, their conclusion could mean either (1) that higher order needs influence the decision and that organizational assistance in satisfying these needs can increase the likelihood that a person will remain in the Navy, or (2) that the decision is dependent upon factors

2. It is interesting to note however, that in their own list Mitchell and Albright (1972) classified as intrinsic two outcomes which appear to be mediated by the organization: (1) opportunity for independent thought and action; and (2) opportunity for personal growth and development.

over which the organization has no control.

This confusion can be largely alleviated by the use of explicit definitions. In this study only those outcomes which are totally free of mediation outside the focal person will be classified as intrinsic outcomes; all others will be considered extrinsic outcomes. This distinction is important for two reasons. First, it is explicit; unless an outcome is clearly within the purview of the focal individual himself to give or withhold, it is by default an extrinsically mediated outcome. Second, this is a meaningful practical distinction because it differentiates between outcomes which the organization can and cannot overtly manipulate to influence behavior.[3]

The specific intrinsic and extrinsic outcomes used in this study are discussed later. By way of illustration, though, we will, unlike Graen (1969), consider recognition an extrinsic variable because an individual is not able to award it to himself. Only those few outcomes which offer no opportunity for overt external mediation such as pride, self-esteem and a feeling of importance will be regarded as intrinsically mediated.

The Model

The model used in this study is adapted from models described by Vroom (1964), Campbell, et al (1970), and Mitchell and Albright (1972). The classes of variables contained in this model are expectancies, valences, outcomes, and instrumentalities (Campbell, et al,

3. I am indebted to Robert Billings for this insight.

1970). The dependent variable is the choice made by each officer---to remain on active duty or retire.

Placing the role choices of this study in an expectancy theory framework, we take as a starting point a central concept of expectancy theory: that the force of a person's motivation to select the active duty or retired naval officer role is dependent on his expectations that his behavior can result in either of the specific first level outcomes (active duty or retirement) and on the sum of valences or satisfactions he believes would derive from the second level outcomes (rewards and punishments) for which each role is instrumental. Some of these valences are intrinsic to the roles themselves and some are extrinsic consequences of them. When the reward or punishment must be provided externally, the link between motivation and performance is mediated by the individual's expectancy that his behavior will result in the reward or punishment (Campbell et al. 1970).

Placing the early retirement decision into this framework our model must deal with mutually exclusive first level outcomes---continued service in the active duty role versus the early retirement role. Whether an individual chooses to retire or not is, according to the theory, dependent upon the relative valence of each role and the person's expectancy of being able to attain it in the case of the retirement role, or of continuing in it in the case of the active duty role. The overall valence of each role is in turn determined by the attractiveness or unattractiveness of relevant second level outcomes and the instrumentality of each role for attaining or

avoiding these outcomes.

Symbolically, the force to retire or not to retire is shown as follows:

$$F = E \left[\sum_{i=1}^{n} (V_i \times I_i) \right]$$

F = Force of atraction to the work or retirement role or the the force to avoid it.
E = Expectancy that effort leads to successful performance (retirement or continued Navy service).
V_i = Perceived valence of the ith role outcome.
I_i = Perceived instrumentality of the work or retirement role for attainment of the ith role outcome.

Extending the Model

Although the foregoing correctly explains the model conceptually, it is not an operational model. To make predictions, we require a within person comparison of force calculations for each of the two role alternatives. To accomplish this, subjects' assessments of the various model components must first be known and combined as is discussed in the following paragraphs.

1. Expectancy: Expectancies pertaining to both alternatives must be known. For continuing the active duty role, one expectancy measure is required---the subjective probability that the person will be permitted to remain on active duty. The retirement role, on the other hand, involves two expectancies. The first is the individual's subjective probability that he will be permitted to retire if he so requests; the second is the subjective probability that he will be successful in achieving the retirement role upon which his valence

and instrumentality measures are based. We call this the anticipated retirement role (ARR).[4]

No precedent exists to tell us how these two retirement-related expectancies should affect the model. The logic of variable combination applicable to other components of the expectancy model suggest four alternatives: (1) a multiplicative combination, (2) a weighted combination of the two, (3) an average of the two expectancies, or (4) use of the lesser of the two expectancy measures. The first alternative is unsuitable because multiplication of some values would give meaningless results. Although initially compelling, the second alternative is impractical because we have no means of determining appropriate weights. The relative utility of alternatives (3) and (4) will be tested empirically.

2. Valence: Another essential component of the model is a summation of subjects' valence measures for each outcome viewed from the perspective of each of the competing roles. Initially, it was assumed that a single valence measure for each job-related outcome would suffice for both the retirement and the active duty roles. However, a number of the officers interviewed in a pre-test evaluated the valence of outcomes differently depending on the role which was the current frame of reference. Consequently, our model is based

4. In retirement-related interviews with naval officers, it was found that most had a fairly clear idea of what kind of work or activity they hoped or planned to take up following retirement. Almost all readily invoked such an image as a frame of reference when they were asked to compare the relative merits of the active duty and retired roles as they would pertain to them personally.

upon the more conservative assumption that valence measures are role specific, and the valence of each outcome is assessed twice, once for each of the competing roles.

3. Instrumentalities: The instrumentality of the two competing roles for each of the outcomes must be measured. Instrumentality is regarded as a relationship in the sense discussed earlier in this chapter.

4. Mathematical Computations: With the expectancy, valence and instrumentality measures in hand, force scores can be computed. This will be accomplished using two formulas, yielding a force to retire (Fr) score and force to remain on active duty (Fa) score. A determination of which of the two is larger is the basis for our prediction (P) of the choice made by each subject.

Formulas used are the following:

$$Fr = \left[\text{the lesser of } (E_1) \text{ or } (E_2)^*\right] \left[\sum_{i=1}^{25} (Vir \times Iir)\right]$$

where: Fr = Force to retire

E_1 = Expectancy that the effort of submitting an official retirement request will result in approval.

E_2 = Expectancy of attaining the chosen post-retirement occupation or activity (ARR)

Vir = The perceived valence of the ith role outcome for the retired role.

Iir = The perceived instrumentality of the retired role for attaining the ith role outcome.

*Should an empirical test show $\frac{E_1 + E_2}{2}$ to be more useful in the model than the lesser of the two values, the former values will be used.

$$Fa = E_3 \left[\sum_{i=1}^{25} (Via \times Iia) \right]$$

where: Fa = Force to remain on active duty.

E_3 = Expectancy of being allowed to continue on active duty.

Via = The perceived valence of the ith role outcome for the active duty role.

Iia = The perceived instrumentality of the active duty role for attaining the ith role outcome.

After Fr and Fa have been computed, Fa is subtracted from Fr to obtain the predictor score (P). When P is greater than zero, a prediction is made that the subject is retired; when P is less than zero, a prediction of active duty is made.

Symbolically:

$$P = Fr - Fa$$

where: $P > 0$, retirement predicted

$P < 0$, active duty predicted

Further Extensions of the Model

As a further extension of the role-choice model, we will test the effects of variables which may mediate between the role preference and role decision. It will be remembered that Mitchell and Knudsen (1973) found that job choice but not job perference was affected by the expectations of family and peers when these expectations were important to the subject. Since the force scores yielded by our

model are more analogous to preferences than choices, it seems appropriate that we should incorporate a wife/family expectancy scale as a moderator between the force score difference (a preference indication) and the behavior itself (the role choice).

The wife/family expectancy scale is computed using the replies to questions which assess (1) the subject's separate perceptions of his wife's and his immediate family's preferences toward his retirement or non-retirement, and (2) a measure of the importance of each of these perceived preferences to the respondent. Employing the logic of the expectancy model, a score is computed by multiplying the wife's perceived preference times its importance, having a potential value ranging from -32 (i.e., wife strongly favors retirement and her opinion is highly important) through zero (wife is neither for nor against retirement, or her opinion is very unimportant) to +32 (wife strongly favors continued active duty and her opinion is very important). A score is similarly computed taking into account perceived preference of the immediate family weighted by its importance. The wife and family preference/importance scores is then summed to yield the moderator variable.

The effects of two additional moderator variables are also examined. Officers who were interviewed earlier in the study made a number of references to the fact that a retirement decision involves the risk of being less well-off following retirement than before. Others referred to this as "inertia," "hesitancy to make a change," or "fear of the unknown." We believe that this variable consists of

two kinds of factors---individual differences on the one hand and on the other what Rosen (1973) terms "confidence in calculations" (p. 20). A measure of this hesitancy-confidence dimension is incorporated as a moderator between the predictor (difference of force scores) and criterion (retirement status). Finally, to assess each individual's propensity to take job-related risks, the Job Preference Inventory (JPI), an eight item Guttman scale developed by Williams (1965) is similarly tested as a moderator between the predictor and criterion.

Based upon the findings of Mitchell and Knudsen (1973) and preliminary interviews, we expect one or more of these three variables to be helpful in explaining the behavior of officers who remain on active duty despite force scores indicating a preference for the retired role.

The Criterion

As discussed earlier, an expectancy theory motivation model is designed to predict intention (Mitchell, 1972). Where external influences impinge upon this intention, behavior will differ from intent. Nonetheless we require as a criterion of role choice an unequivocal behavior not requiring interpretation.

The variable most closely meeting these requirements as the criterion of voluntary retirement is the subject's statement that (a) he is retired or (b) that he has submitted an official retirement request to the Secretary of the Navy---the first overt formal step in the retirement procedure. The stated absence of an official retirement request will serve as the criterion of a choice to remain on active duty.

Hypotheses

In the preceding sections of this chapter, the naval officer role-choice model was described, together with a discussion of the formulas, problems, and issues to be examined.

In the remainder of this chapter we will state both general and specific hypotheses tested using data gathered from a sample of naval officers. These hypotheses were drawn from three sources: (1) the literature of expectancy theory; (2) the responses of naval officers interviewed earlier in the study; and (3) the opinions and beliefs of the author, who is a naval officer.

These hypotheses are of two general kinds. Hypotheses one through three deal with conceptual questions raised in this study; a general hypothesis plus hypotheses four through ten test the accuracy and functioning of the extended role-choice model.

Conceptual Hypotheses

Role satisfaction: Based upon the findings of Mitchell and Albright (1972), we expect that the degree to which an individual is satisfied (S) with his role as an active duty naval officer is a monotonically increasing function of the products of the valence (V) of various intrinsic and extrinsic rewards and punishments (role-related outcomes) and the perceived instrumentality (I) of his role for the attainment or avoidance of these outcomes.[5]

5. We do not agree with Mitchell and Albright that importance is synonymous with valence. Further our reference to intrinsic and extrinsic outcomes refers to the somewhat more specific definition discussed earlier rather than the one used by Mitchell and Albright (1972).

Symbolically:

$$S = \sum_{i=1}^{25} (Via \times Iia)$$

where: S = Satisfaction with the active naval officer role.

Via = The perceived valence of the ith role outcome for the active duty role.

Iia = The perceived instrumentality of the active duty role for attaining the ith role outcome.

We assume that role satisfaction as assessed using the formula just described is essentially synonymous with global measures of overall job satisfaction. Hence,

Hypothesis 1a: There will be a strong positive correlation between role satisfaction, discussed above, and three measures of overall satisfaction with the Navy and with the job held at the time the retirement/non-retirement decision was made---the Career Decision Point (CDP). The three satisfaction measures are (1) an index of general satisfaction with the subjects' overall treatment by the Navy as a measure of role satisfaction; (2) a second role satisfaction measure based upon whether he would recommend a Navy career to his son; and (3) the total Job Descriptive Index score as a measure of satisfaction with the specific job held at the CDP.

Hypothesis 1b: There will be a negative correlation between satisfaction (S) and the decision to retire from the Navy.

Valence versus importance: It was argued earlier that valence and importance are conceptually different. If these are indeed different constructs, their values should vary independently. Hence,

Hypothesis 2: There will be no correlation between the importance of an outcome and the mean of the valences of that outcome for the active and retired roles.

Situational effects on valence: In an earlier discussion, we noted the apparent tendency on the part of active duty naval officers to assign different valences to the same role-related outcomes when assessing them from the perspective of two different roles. For example, on several occasions officers noted that family separation, although undesirable, is a part of Navy life, although they would not regard this as true for civilian occupations. Consequently, many rated separation as neutrally valent or slightly negatively valent for the Navy role. When asked about its valence for the retired role, however, they were much more negative in their evaluation. Hence,

Hypothesis 3: When two identical sets of role-related outcomes are assessed twice, once for each of two mutually exclusive competing roles, the valences assigned to each of the identical pairs will be significantly different.

Hypotheses Testing the Role-Choice Model

The general hypothesis holds that the extended expectancy model of role-choice described earlier will accurately distinguish between Regular Navy Officers who have chosen to retire early and those who

have not.

E_1, E_2: As discussed earlier in this chapter, the Force to remain on active duty (Fa) is affected by one expectancy, (E_3), the subjective probability that the individual can, if he desires, remain in the active duty role. In contrast, we assume that the Force to retire (Fr) is affected by two subjective probabilities: the expectancy that a retirement request will be approved by the Navy (E_1) and the expectancy that he will be successful in attaining the Anticipated Retirement Role (ARR), the activity upon which his valences and instrumentalities for the retirement role are based (E_2). The two uses of these variables (E_1 and E_2) as an expectancy measure for determining force to retire (Fr) which were considered to be both reasonable and feasible were: (1) an average of E_1 and E_2 or (2) the lesser of the numerical values of E_1 and E_2. We are not certain which of the two approaches is appropriate, however. Hence,

Hypothesis 4: Computing the force to retire score (Fr) using the lesser of the expectancy measures (E_1 and E_2) will not yield more accurate results than can be achieved using an average of these two measures.

Two forces: It has been suggested by March and Simon (1958) and Vroom (1964) that to understand turnover we must consider motivational forces relating to the present role and external forces as well. More recently, McLaughlin and Butler (1974) presented results showing that data relating to anticipated satisfaction with job characteristics

of alternative careers can be useful for predicting retention of army officers. Hence,

Hypothesis 5: The use of a force to retire score (Fr) in conjunction with a force to active duty score (Fa) in the role-choice model will predict retirement status better than the Fa score alone.

Outcome importance: Conceptually, as many job-related outcomes as are relevant to the subjects of a study should be included in a predictive model (Mitchell, 1972; Mobley, 1971). Mitchell says, however, that Rosenberg (cited in Mitchell, 1972) found better predictions based upon a limited number of outcomes. We will test the role-choice model with all twenty-five role-related outcomes included and again with only those eight outcomes judged most important by each of the subjects taking part in the study.

Hence,

Hypothesis 6a: The accuracy of the model in discriminating between retirees and active duty officers will not be significantly reduced when the twenty-five role-related outcomes are reduced to the eight judged most important by each of the subjects.

It was suggested earlier that importance and valence are probably different constructs. It was also postulated that outcome importance may have an independent effect on the usefulness of a particular outcome. One way of determining whether this assumption is correct is to compare the predictive accuracy of the model when the most important outcomes of each subject are included with another configuration employing

a less important set. Thus,

Hypothesis 6b: The model will more correctly discriminate between retired and active duty officers when the eight most important outcomes are included in the model than when a random sample of eight outcomes taken from the twenty-five are employed.

Intrinsic/Extrinsic Outcomes: The lack of agreement concerning the distinction between internally and externally mediated rewards and punishments has been discussed at length. The two most commonly accepted definitions were also described. It was concluded that extrinsic and intrinsic factors should be more clearly defined after which the assumption that intrinsic factors have more motivational impact than extrinsic factors should be tested. We will consider as extrinsically mediated all of the outcomes except those which are evaluated as being unquestionably intrinsically mediated by a panel of outside judges. The latter are in general those we would describe as "feelings" arising from a role, i.e., self-fulfillment, importance, self-esteem, etc. Thus,

Hypothesis 7: Intrinsically mediated outcomes when taken together in the model will result in more accurate discrimination between retirees and active duty officers than will the extrinsically mediated outcomes employed in the same fashion.

Negatively Valent Outcomes: Mitchell (1972), and Mobley (1971), have suggested that expectancy theory models are sometimes less accurate because outcomes having a negative valence are omitted. Thus,

Hypothesis 8: The role-choice model will more accurately discriminate between retired and active duty officers with the inclusion of all role-related outcomes than it will following removal of outcomes whose mean valence values are negative.

Non-expectancy mediating variables: As discussed earlier, the expectancy theory model of role choice measures most directly a preference between the mutually exclusive roles which subjects may choose. Consequently, for reasons not assessed by the model, a person who would ceteris paribus prefer retirement to active duty may remain on active duty because of the effects of mediating variables. Similarly an officer who would prefer the active duty role may be retired. Among the factors which might have the effect of keeping on active duty officers who would otherwise prefer retirement are those we term psychological cost factors. These include what we call "inertia," "hesitancy," or "fear of the unknown," and propensity to take job-related risks. Thus,

Hypothesis 9a: Inclusion of a measure of hesitancy to retire as an additional component of the role-choice model will increase the usefulness of the model for explaining retirement status.

Hypothesis 9b: Including the Job Preference Inventory score (Williams, 1965) as an additional component of the role-choice model will further enhance the usefulness of the model.

Also discussed earlier was the finding of Mitchell and Knudsen (1973) that the expectations of others had a greater effect on job choice than

on job perference. Accordingly,

Hypothesis 9c: Including the wife/family influence index as an additional component of the role-choice model will further enhance its usefulness for explaining respondents' retirement status.

An alternative model: An expectancy theory predictive model such as we have described has heuristic value in helping us to conceptualize and otherwise deal with the issues of motivated behavior in a work setting. Heuristic value alone, however, is of questionable value if the model is unsuccessful in its primary function---predicting behavior. A germane question then is how does our model compare in its capacity to discriminate correctly between the two sub-populations of concern? To answer this question we will use a number of demographic and personal report measures which we will incorporate into a stepwise multiple regression model to select the "best combination" of variables (in the least squares sense) and weight them to produce a predictive equation. Hence the null hypothesis:

Hypothesis 10: The expectancy theory role-choice model will not discriminate more accurately than the multiple regression model designed to make the same discrimination.

CHAPTER IV

RESEARCH DESIGN AND METHODOLOGY

Goals

The objectives of this study are twofold---greater understanding of early retirement among naval officers as a practical matter, and determination as a theoretical issue of whether expectancy theory is useful in explaining this previously neglected form of choice behavior. The following goals have been chosen to achieve these objectives:

1. Identification of differences and similarities between retired and active duty naval officers, and determination of what the officers themselves consider to be relevant issues in the retirement decision.

2. Assessment of the capability of our role-choice model to distinguish between active and retired officers using their responses to a self-report measure.

Research Design

Ideally this study would be conducted using a longitudinal design. Individual predictions for a cohort would be made in advance of the retirement decision based upon data collected from each person. Analysis of predictive accuracy and the appropriateness of the model would take place perhaps one to two years after all of the group had attained retirement eligibility. At least three years would be required to complete a study using this design. Because this amount of time was

not available, a concurrent design was necessarily chosen. As a consequence, the findings of this study, however favorable or unfavorable, must be considered tentative and subject to future confirmation.

In keeping with this concurrent design, all subjects are Regular Navy Officers who have attained retirement eligibility. About one-third of this population are actually retired and the rest have remained on active duty. Because all subjects had already made the decision as to whether they would retire at or shortly after initial eligibility, it was necessary to elicit retrospectively the perceptions held during the decision process. Gathering the required data in this way presented two potential sources of inaccurate information: (1) incorrect recall due to the passage of time since the decision; and (2) distorted perceptions caused by cognitive dissonance reduction.

The problem of inaccurate recall: It was found in pre-test interviews that potential respondents believed they could recall their perceptions accurately so long as they could concretely identify where they were and what job they held when their retirement decision was made. Accordingly, instructions to respondents suggested that before beginning the questionnaire, they recall when they initially decided whether or not they would retire early; this point was referred to as their Career Decision Point (CDP). Subjects who denied having considered retirement were asked to respond as they would have when they first became eligible for retirement. To assist respondents in fixing this point firmly in their minds, the questionnaire instructions (Appendix A, p. 2) suggested that each officer determine when and where

his CDP occurred; it was also suggested that he write down the date and the duty station to which he was assigned as a reference. Based upon pre-test results and comments made on returned questionnaires, it is believed that this procedure and the rather detailed instructions and reminders employed throughout the questionnaire largely removed faulty recall as a significant source of distortion.[1]

The potential bias from dissonance reduction: Festinger (1957) described cognitive dissonance as a feeling of discomfort arising when a person simultaneously holds two or more cognitions which are not consonant with each other. Among the typical causes of cognitive dissonance is forced choice. When a person chooses between mutually exclusive alternatives which are similar in attractiveness but different in other properties, these dissonance feelings may be created by the act of choice. One way of reducing this dissonance is to cognitively reevaluate the alternatives, increasing the attractiveness of the one chosen and decreasing the attractiveness of the one rejected (Vroom, 1969, p. 237). The knowledge that one very much liked being a naval officer but that he has voluntarily left the Navy in favor of another role is an example of a potentially dissonance producing situation. The presence of this phenomenon following a job choice was demonstrated by Vroom (1966). Also worthy of note, however, is the finding of

1. An example of comments received is one in which the respondent suggested that the author might prefer to disregard his rather extreme responses concerning the conditions of his job (the Job Descriptive Index) because at his CDP he was a prisoner of war in Hanoi and had been so for a number of years.

Vroom and Deci (1971) that when remeasured one year after choice, the inflated attractiveness had decreased markedly.

Since dissonance reduction was recognized early as a potential source of cognitive distortion in this study, considerable care was exercised in designing the questionnaire used so that dissonance arousal would be minimized. It is believed that these precautions and the natural decrease over time of any inflated attractiveness has kept this phenomenon from exerting a substantial influence on the findings. Further, it should be remembered that dissonance reduction occurs only when the unchosen alternative is similar in attractiveness to the one chosen. Also, people vary considerably in their ability to tolerate dissonance; even if dissonance exists, "dissonance maintenance" is fairly common among the more cognitively complex (Kelman and Baron, 1968; Abelson, 1968). Furthermore, for subjects whose career preference was unambiguous, and those for whom the instrument did not arouse any latent dissonance, this reduction phenomenon would not have occurred.

When all of the foregoing factors are considered, including the relative opaqueness of the questionnaire, the number of respondents for whom the alternatives were not equally valent, the length of time since the decision, and the probability of high levels of cognitive complexity in this population, we do not believe that the effects of dissonance reduction pose a serious threat to the validity of the study findings, although this possibility cannot be completely ruled out.

The Study Population

Retirement eligible active duty and voluntarily retired male Regular Navy Officers constitute the study population. Women, Reserve Officers, Warrant Officers, and certain officer groups whose members are predominantly ex-enlisted men are not included because these groups follow different career patterns and/or are subject to different retirement regulations.

Another consideration in limiting the study population was to eliminate to the greatest extent possible persons for whom the retirement choice is perceived as other than purely voluntary. To accomplish this, every effort was made to exclude those facing the possibility of involuntary retirement in the near future. Most officers who are not involuntarily retired at the twenty year mark (due to non-selection for promotion) next face the possibility of involuntary retirement upon completion of twenty-six years of commissioned service. Consequently the cohort included in this study were selected because they are far enough past the twenty year mark to have retired if they desired to but not close enough to the twenty-six year mark for forced retirement to exert an undue effect on their retirement decisions.

Specifically, the study population includes active and retired Regular Navy Officers whose active service commenced twenty and one-half to twenty three and one-half years before the study began--- those whose Active Duty Base Dates fall between July 1, 1950, and June 30, 1953. All officers included had been eligible for retirement more than six and less than forty-two months.

Population size: Preliminary Bureau of Naval Personnel data showed 3108 officers satisfying our population eligibility criteria. Of these, 2471 were shown to be on active duty and 637 were voluntarily retired. Table 2 shows a further breakdown of these totals.

Table 2: Population Summary

Active Duty Base Date	Active Duty	Retired	Total
1951	643	289	932
1952	804	237	1041
1953	1024	111	1135
	2471	637	3108

Source: Bureau of Naval Personnel, October, 1973.

Procedures

Preliminary Research Procedures

Because the naval officer population included in the study is literally all over the world, the most practical means of data collection is a mailed questionnaire.

Interviews: As a means of attaining information needed to prepare this questionnaire and perhaps more importantly, as a means of becoming more aware of the naval officer's outlook toward retirement, the first stage of this study consisted of interviews with a number of naval officers who had reached or would soon reach retirement eligibility. These interviews were conducted in two stages. The earliest sessions were largely unstructured, in-depth discussions of retirement, when

the decision is made, how it is made, family involvement, important factors in the decision, etc. Simultaneously discussions were initiated with officers in the Bureau of Naval Personnel who are responsible for administering retirement. Later, based upon insights gained in both kinds of preliminary sessions, a somewhat more structured interview was worked out. These later interviews were conducted at two sites in the Eastern United States, chosen for the diversity of professional qualifications and previous experience represented among the officers assigned there. The primary goal of these second-stage interviews was to identify that list of specific job-related outcomes most relevant to the retirement decision for the greatest number of the population of interest and to discover each person's assessment of a list of outcomes drawn up previously. An effort was also made to elicit further insights relating to reasons for retirement or non-retirement, the decision process involved, and to discover additional relevant outcomes.

Content and form of questions, ways to avoid dissonance arousal, and checks to insure universal understanding of terminology which would be used in the questionnaire were additional issues studied in the interview context.

In each of the locations visited, an effort was also made to seek out interview opportunities with retired officers by asking active officers if they knew any recent retirees in the area. Although this was a less efficient procedure, six retired officers were interviewed, over a three month period, compared with twenty-one active officers interviewed during the same period.

Steps Taken to Increase the Response Rate

The questionnaire designed for this study is twenty-five pages in length. Its instructions are complex and relatively difficult to comprehend and follow. It seemed likely that even among naval officers, a usually cooperative population, extraordinary measures would be required to attain a desirable rate of correctly completed and returned questionnaires.

Questionnaire construction and pretesting: To accomplish this, a great deal of effort was devoted to framing questions in terminology familiar and meaningful to subjects.[2] Further, because a large proportion of the officers interviewed said they would not reply to a questionnaire requiring that they identify themselves, the questionnaire was made anonymous (unfortunately at the cost of foregoing the opportunity for follow-up studies). The questionnaire was also pretested and subsequently revised extensively to eliminate problems encountered.

Preliminary and follow-up letters: In a further effort to persuade subjects who usually have heavy workloads to contribute the hour or more required to complete the questionnaire, a letter was sent to each subject one week in advance of the questionnaire[3] (See Appendix B). The letter explained the research project, described the author and

2. Mobley's list of steps taken to avoid problems when using self-report measures was helpful in this stage of questionnaire preparation (1971, p. 71).

3. I am indebted to David Whetten who initially suggested the potential value of a preliminary letter such as this. Levine and Gordon (1959) have also noted the value of this procedure for increasing participation.

the purpose of the study, and emphasized its potential usefulness to the Navy. It also stressed the need for a high participation rate and asked each officer to set aside time so that he could complete the questionnaire as soon as he received it. In addition to the relatively high return rate achieved (discussed later in this chapter), an indication of the letter's effectiveness was demonstrated by the several instances where officers who had received the original letter but not the questionnaire notified the author so that another questionnaire could be sent.

A follow-up letter was also sent to all subjects (See Appendix C). Since anonymity of replies precluded a knowlege of who had and had not responded, this letter thanked those who had already responded and urged immediate participation by those who had not. It too resulted in several letters stating that individuals had not received questionnaires or had lost them, and several subjects responded that they had returned theirs previously. In general, however, the follow-up letter did not appear to appreciably increase the response rate since approximately 86 percent of the total responses had been received when the follow-up letter was mailed.

The Instrument

Because of the unique population and the fact that an expectancy theory study of retirement has not been conducted previously, a large portion of the questionnaire used was of necessity prepared especially for this project. Where they were available, however, appropriate

previously validated measures were incorporated.

Three kinds of data were asked for by the questionnaire: (1) personal and career history information, (2) retrospective measures required for the role-choice model, (3) retirement reasons and post-retirement experiences of retirees.[4]

Questionnaire layout: The first part of the questionnaire asks about the individual's Navy status, occupational data, educational background, his family, expectancy perceptions, and his readiness and preparation for retirement. The second part measures valence, instrumentality, and importance of the twenty-five role-related outcomes. This section also includes a job satisfaction measure, and a job-related risk-taking scale. The final section of the questionnaire applies only to retired officers and is concerned with reasons for their retirement and their retirement experiences.

Measures

Described below are role-related outcomes and measures employed to assess components of the role-choice model and hypothesized moderating variables. Model components include expectancy, valence, and instrumentality measures. Possible moderating variables include wife/family expectation measures, a risk-taking index, a measure of hesitancy to retire, and measures of job satisfaction.

Role-related outcomes: Fifty role-related outcomes were generated during the interview process. Judgmental selections from among these

4. The questionnaire is Appendix A.

were made by the author based upon (1) the number of interviewees who considered each outcome as being relevant to his retirement decision and the relative importance each gave to it; and (2) their similarity to variables found to have explanatory power in previous expectancy theory studies. Twenty-five outcomes were finally selected for use in this study.

Expectancy: Three measures of role-attainment expectancy (E_1, E_2, E_3) were assessed using verbally-anchored eleven point scales. The respondent was asked to give the opinion he held at his CDP of the probability, between "no chance" (0) and "attainment certain" (1.0) of his (1) being allowed to retire from the Navy if he so requested (E_1); (2) attaining the occupation or activity he would have preferred in retirement---his ARR (E_2); and (3) being allowed to remain on active duty in the Navy if he did not request retirement (E_3).

Valence: Each respondent was asked to indicate the valence for him (at his CDP) of each of the twenty-five role-related outcomes (1) from the perspective of himself as a retired officer in his Anticipated Retirement Role (ARR), and (2) as an active duty officer. The two sets of valence measurements were separated in the questionnaire to reduce the possible influence of one set on the other. Questionnaire instructions also cautioned respondents against letting one influence the other.

Valence was measured using a verbally anchored, bi-polar, nine-point scale, ranging from "maximum undesirability" (-4), through "does not matter" (0), to "maximum desirability" (+4). The nine-point scale

was chosen as a compromise between (1) a shorter scale with a higher probability of range restriction (noted among interviewees asked to respond to a five-point scale) and (2) the finding that scale reliability tends to level off at about seven steps and that little gain is achieved from increasing the number of steps beyond eleven (Nunnally, 1967).

Instrumentality: The logic of an expectancy theory model requires that instrumentality and valence be measured using the same number of scale steps to avoid giving greater weight to one component than the other (Mitchell, 1972). Consequently, a verbally anchored nine-point scale was also used to measure the instrumentality of (1) the active duty role for each of the twenty-five outcomes, and (2) the instrumentality of the Anticipated Retirement Role (ARR) for each of the same twenty-five outcomes. Again, the active duty instrumentality measures and the equivalent ARR measures were separated in the questionnaire, and subjects were cautioned as before to avoid being influenced by their earlier answers or by their experiences since the CDP.

Wife-Family influence: The influence of wife and immediate family were measured (separately) using four questions, one each to elicit the subjects' perceptions of the opinion of the wife and immediate family, and one each to assess the importance of wife and family opinions to the subject. The opinion questions elicited the perceived opinions on scales ranging from "strongly favored retirement" (-4) through "no opinion or don't know" (0), to "strongly favored continued active duty" (+4). The importance of each opinion to the subject was measured

on scales ranging from "very unimportant" (0) to "very important" (+8).

Each perceived opinion measure was multiplied by the analogous importance value, yielding a potential range of scores for each (wife and family) from -32 (wife or family strongly favored retirement and the opinion was very important to the subject), through zero (wife or family had no opinion for or against retirement; or subject was not aware of the opinion; or the opinion was considered very unimportant), to +32 (wife or family strongly favored continued active duty and subject held the opinion to be very important).

Hesitancy: In Chapter III, we discussed the "confidence in calculation," "hesitancy," "inertia" or "fear of the unknown" factor in choice. This measure was operationalized in a single question offering seven possible levels of hesitancy the subject felt when considering his retirement decision. "I felt absolutely no hesitancy" is at one extreme, and "I was so hesitant that it overcame all other considerations..." is at the other.

Risk-Taking: To assess a subject's willingness to take a job-related "calculated risk," Williams' (1965) Job Preference Inventory (JPI), an eight item Guttman scale was employed. A major difference should be noted between this measure and the hesitancy measure just discussed. The JPI measure is general, while the single question "hesitancy" measure is situation specific to the naval officer career decision. It should also be noted that the JPI has been tested extensively (Williams, 1965), where the hesitancy measure has not been used before.

Satisfaction measures: Three measures of satisfaction were included. The first is the Job Descriptive Index (Smith, Kendall, and Hulin, 1969) which measures five dimensions of job satisfaction (work itself; supervision; co-workers; pay; promotion). The revised scoring weights recommended by Smith, Hulin, and Kendall were employed (1969, p. 79). Two other modifications in the use of this index should be noted: (1) Subjects were instructed to rate the job held at their CDP instead of their present job and (2) one pay scale item, "profit-sharing," was omitted as inappropriate for naval officers.

Since the JDI is designed to measure satisfaction with a particular job, two other measures were included to furnish measures of satisfaction with the Navy in general. These are a measure of satisfaction with the overall treatment the individual has received from the Navy and a measure to determine the likelihood that he would recommend a naval officer career for his son.[5] The need to measure these different kinds of satisfaction was suggested by Mitchell and Albright (1972) who concluded that satisfaction with the subject's specific job had a higher relationship with the decision to remain or leave the Navy than did overall satisfaction with the Navy.

Criterion

Retired or active duty status was determined as follows:

1. Subjects whose questionnaire responses indicated that they were retired or had initiated a retirement request were considered as

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5. The latter item was suggested by a question employed by Sharp and Biderman (1966).

being retired; reference was then made to a question which determined the conditions of retirement. If retirement was reported as being involuntary, the subject was removed from the sample of primary concern. Those remaining were considered voluntary retirees.

2. Those indicating active duty status and no pending retirement request were checked to insure that they consider themselves eligible. Those reporting themselves as ineligible for any reason were removed with the remainder constituting the voluntary active duty category.

Consequently there were two groups of primary interest for testing the role-choice model, voluntary active duty officers and voluntary retirees; two smaller groups for whom data exist are the involuntary retirees and active duty officers ineligible for retirement.

The Sample

Although the originally furnished summary totals previously shown in Table 2 were the most accurate available when the study was planned, subsequent experience has shown that these were somewhat inaccurate. Inaccuracies were due primarily to (1) duplication of records in the computer accessed officer master files of the Bureau of Naval Personnel; (2) the existence in the listings of supposedly voluntarily retired officers who were in fact retired involuntarily or who retired voluntarily a short time before being involuntarily retired to avoid the supposed stigma of being "forced out;" and (3) officers inadvertently included in the listings provided who should have been excluded (e.g., Limited Duty Officers). Although this problem was recognized early and partly corrected when the sample was selected, some subjects

who did not, by our definition, belong in the sample could not be identified until data collection was complete. Accordingly, it was decided that a larger sample than would be required to satisfy statistical requirements would be employed in order that, if necessary, substantial numbers of returned questionnaires could be eliminated without undermining the study.

A larger sample was also suggested by additional factors: (1) officials suggested that we might find as many as ten percent of retiree questionnaires undeliverable due to inaccurate addresses; and (2) some active duty personnel are always in transit between duty stations or are otherwise unavailable to mail service for relatively long periods. For these reasons, it was decided that the sample would be as large as practicable with over-sampling occurring to the greatest degree among retirees where the largest losses were expected.

Sample Selection Procedure

Subjects were chosen using the last two digits of their Social Security Account Numbers (SSN).[5] The procedure described by Wallis and Roberts (1956, pp. 631-632) was employed to select the list of random numbers excluding duplications.[6]

5. The SSN also serves as the Navy identification number.

6. For example, the first random number chosen was 38; if a one percent sample were needed, all officers satisfying other population eligibility criteria who had the digits 38 as the last two numbers of their SSN would be chosen. If two percent were desired, those having the next number, 57, as terminal digits would be added, and so on until the desired sample had been reached.

At the beginning of this study, after examining the summary totals shown in Table 2, it was concluded that the upper limit of the sample size required would not exceed 67 percent of the population. Accordingly, officials of the Bureau of Naval Personnel who had been directed to furnish listings and mailing labels for subjects were asked to provide this information for all members whose terminal SSN matched the sixty-seven numbers provided by the author. Once final sample percentages were determined, each potential member of the sample was checked to remove duplications, obviously ineligible officers, and those for whom no address was available. In cases where eligibility was in question, the individual was included, necessitating further eligibility checks based upon the answers given in the returned questionnaires.

Active duty sample: Active duty officers matching the first thirty random numbers were selected to approximate a 30 percent sample. This provided an initial list of 722 officers. Seventy-five were removed because their files contained an incomplete address; another 137 did not satisfy the sample selection criteria---most were found to be Limited Duty Officers. This left a total of 610 subjects; one additional subject was removed because he had served as an interviewee. Thus, questionnaires were mailed to 609 active duty officers.

Retired sample: For the retired sample a larger percentage of the population was drawn (as discussed earlier) because it appeared that as many as 35-40 percent might prove ultimately to be involuntary retirees. Consequently, retirees whose terminal SSN matched the entire sixty-seven random numbers were included. This gave an initial total

of 683. Seventy-seven of these 683 should not have appeared in the list (e.g., Limited Duty Officers, duplications, etc.). Their removal reduced the list to 606; an additional 73 were removed because no address was available or because they live overseas and cannot be contacted. Accordingly, 533 retirees were sent questionnaires.

Total sample: The final list to whom questionnaires were actually mailed consisted of 609 active duty officers and 533 retirees, a total of 1142 subjects. Twelve active duty and four retired officers' questionnaires were subsequently returned as undeliverable, reducing potential respondents to 597 active duty and 529 retirees. Table 3 shows the return rate and related data.

Analysis of Returns

Table 3: Questionnaire Mailing and Returns Received

	Initially Mailed	Undeliverable	Returned Usable	Returned Unusable	Percent Returned
Active	609	12	450	6	76.4
Retired	533	4	362	23	72.8
Totals	1142	16	812	29	74.7

Cases included in analysis: Since our hypotheses deal only with voluntary retirement or non-retirement, those who are forced to retire or are ineligible for voluntary retirement cannot properly be included in the sample. Despite the efforts described above to

eliminate these officers who are not in the groups of primary interest, completed questionnaires were received from a number of involuntary retirees and officers not eligible to retire. Consequently, officers who responded represent four sub-samples:

1. Active duty officers who have taken no official action to retire.
2. Officers who have retired previously and active duty officers who have officially requested retirement.
3. Involuntarily retired officers.
4. Officers who despite completion of more than twenty years of service believe themselves to be ineligible for retirement.

The numbers of officers in each category are shown in Table 4.

Table 4: Respondents by Category

Active Duty		414
Retired Voluntarily	273	
Active Duty, Retirement Requested	15	288
Total Respondents in study		702
Retired Involuntarily*		89
Active Duty, Not Retirement Eligible*		21
OVERALL TOTAL		812

*Data from these officers have not been included in any analyses or conclusions because their decisions were not voluntary.

Comparison of Sample and Respondent Characteristics

To determine whether the 812 respondents are appreciably different

than the 1142 officers of the initial sample, the distributions of three variables were examined for each of these groups. The three variables chosen were rank, professional specialization, and present age. The test used for the first two, which are categorical variables, was a Chi Square Goodness of Fit test; a Z-test for difference of means was employed to compare ages. The distributions of the initial mail sample and the respondent population were not significantly different ($p < .05$) on these variables.

Statistical Procedures

Analysis of the data collected in this study employed three general kinds of statistical procedures.

1. Accuracy of predictions: Although this research design precludes actual predictions as they would be made in a longitudinal study, a blind "prediction" of each person's status (active or retired) was made using the prediction score (P) obtained from the difference between Fr and Fa, prior to checking his actual status.

Using the term prediction in this sense, the mean squared contingency statistic (phi) described by Hays (1963) and Weiss (1968) is used to provide an index of the departure of the "predictions" made using the role-choice model from what might occur due to chance. Nunnally (1967) refers to phi as a special case of the product-moment correlation for two dichotomous variables.

2. Relative contribution of model components: Multiple correlation analysis was used to determine the contribution of each of the components

of the role-choice model to the model's over-all usefulness. Multiple correlations also serve to analyze the explanatory usefulness of moderator variables.[7]

3. An alternative model: To provide an alternative model whose accuracy can be compared to the "predictions" of the role-choice model, a large number of variables were introduced stepwise into a multiple regression model. The regression equation was derived using two-thirds of the sample, selected randomly, and cross-validated using the remaining one-third. This two-third, one-third split is suggested by Dunnette (1966).

7. Multiple regression and correlation were judged to be the most appropriate statistical analysis tools for this study, considering the number of independent variables whose effects had to be controlled and explained. This presented a problem, however, because the dependent variable, active-retired status, is unequivocally dichotomous. Discussions of the potential difficulties of employing a variable coded 0,1 when predicted values can in fact exceed these limits have been discussed by Neter and Maynes (1970) and more recently in an exchange between Gunderson (1974) and Lipsky (1974). In a related paper Gunderson studied five alternative techniques, however, and concluded empirically that "ordinary least squares estimation of the linear probability function may be chosen as a simple and computationally feasible technique for dichotomous dependent variables " (1972).

CHAPTER V

RESULTS

This chapter contains three parts. The first deals with respondent characteristics, similarities and differences. The second describes the results of tests of study hypotheses. The final section analyzes the usefulness of components of the role-choice model employed in this study.

Respondent Characteristics

As discussed in the previous chapter, the sample upon which the results are based is comprised of 702 respondents, 288 retired and 414 active. Average ages of the active duty officers and voluntary retirees were 43.7 and 44.0 respectively. These means are not significantly different ($p > .05$). Minimum and maximum ages in both groups were 38 and 57. The mean ages of active and retired officers at their Career Decision Points were 42.0 and 41.9 respectively; again these means are not significantly different.

Ninety-three percent of the retirees and 95.9 percent of the active officers were married. When respondents became eligible for retirement, the mean number of children was 3.09 for retirees and 3.03 for active officers. Seventy-one percent of each group had children twelve or younger at that time.

Table 5 shows the distribution of active officers by current

rank and retirees by rank held at retirement. It will be noted in Table 5 that Captains are disproportionately represented among active officers, as are Lieutenant Commanders among retirees. This should not be misconstrued, however, as it is partly a result of the fact that some officers have not yet become eligible for a rank higher than Lieutenant Commander when they attain retirement eligibility. Moreover, to be eligible for promotion to Captain most officers must serve more than twenty years. This does not suggest, however, that perceived likelihood of future promotion does not also have an impact on officers' retirement decisions.

Table 5: Respondent Distribution by Rank*

	Retired	Active	Total
Captain (0-6)	29	182	211
Commander (0-5)	175	189	364
Lieutenant Commander (0-4)	83	43	126
Rank not indicated	1	0	1
TOTAL	288	414	702

*Officers reporting impending promotion are shown in the rank for which they are selected; retirees are listed by rank held at retirement.

Table 6 gives a summary of respondents by area of professional specialization. A review of the percentage of retired officers in Table 6 shows that physicians, Supply Corps officers and Engineering

Duty officers are disproportionately represented among retirees. Two probable explanations for this are (1) a greater number of job opportunities and (2) greater awareness of existing opportunities as a result of the "boundary-spanning" roles occupied by these officers. It will also be noted that submariners are under-represented among retirees. A plausible explanation for this based upon the author's experience is the perception of more favorable opportunities for future promotion in the Navy.

Table 7 shows respondents' levels of education.

Reasons for Retirement

In preliminary interviews each officer was asked to give the major factors which had (or would) influence him to retire. The twelve reasons given most frequently in these interviews were listed in the questionnaire (Question C-4).[1] Respondents were asked to indicate all of these reasons which affected their own decision. Since most retirees listed five or fewer reasons, only the first five reported by each person were tabulated. The reason which was listed first with the greatest frequency was "little or no opportunity for future promotion." It was also cited by the largest percentage of retirees as one of the five reasons (57 percent). Twenty-nine percent gave this as the single most important reason, whereas the next most frequently listed, "dissatisfaction with job or working conditions," was selected by 13 percent.

1. Question numbers refer to numbers in the data collection questionnaire which is Appendix A.

Table 6: Distribution of Respondents by Professional Specialization Categories

Category*	Retired	Active	Percent Retired
Line Officers (surface) (1100, 1110)	62	98	38.8%
Line Officers (submarine) (1120)	18	46	28.1%
Line Officers (aviation) (1310, 1320, 1350)	95	153	38.3%
Engineering Duty Officers (1400, 1510, 1520, 1700, 5100)	36	35	50.7%
Special Duty Officers (intelligence, communications, etc.) (1610, 1620, 1630, 1810, 1820)	13	23	36.1%
Physicians (2100)	12	6	66.7%
Dentists (2200)	5	14	26.3%
Lawyers (2500)	0	1	0.0%
Supply Officers (3100)	39	27	59.1%
Chaplains (4100)	8	11	42.1%
TOTAL	288	414	41.0%

*Officer Designators included in each group are shown in parentheses below descriptive titles.

Table 7: Highest Level of Education

	Retired	Active	Total	Percent Retired
Less than BA/BS	47	57	104	45%
BA/BS	140	188	328	43%
MA/MS	80	141	221	36%
LLB	0	1	1	0%
DDS	5	13	18	28%
MD	12	6	18	67%
PhD	3	6	9	33%
Not Reported	1	2	3	33%
TOTAL	288	414	702	41%

Other factors affecting the decision of at least one-third of the retirees were "putting down roots;" the desire for a civilian second career; the advantages of making an early transition to retirement; dissatisfaction with Navy jobs; and a desire to avoid family separation. Table 8 contains a summary of these data.

Post retirement activity: Nearly sixty-nine percent of the retirees are working full-time. Adding those expecting to work full-time in the near future, the number increases to 88 percent, which agrees substantially with the finding of Sharp and Biderman (1966) that most military retirees seek full time jobs. Considering the intention to work, however, it is interesting that 79 percent of the retirees took no action to seek a job or business opportunity prior to their

Table 8: Reasons Given for Voluntary Retirement

Reason	% of respondents listing as most important	% listing among five most important
1. I was dissatisfied with my job or working conditions.	13%	39%
2. I saw little or no opportunity for further promotion.	29%	57%
3. Uncertainty concerning retention and/or future benefits.	1%	13%
4. I (or my wife/family) wished to avoid family separation.	8%	32%
5. My illness or declining health.	<1%	<1%
6. My family had a personal problem (e.g., health, education, etc.) that I could not handle and remain in the Navy.	7%	17%
7. There is a specific job in civilian life I wished to take.	3%	17%
8. I had a strong desire for a second career.	12%	50%
9. Since I could not remain in the Navy to age 65, I thought it better to make the transition to a civilian career earlier rather than later.	7%	41%
10. I believed I could find a more satisfying civilian position.	8%	48%
11. I desired to permanently locate - to put down "roots."	10%	53%
12. I desired a job with normal working hours and requirements.	<1%	14%

Career Decision Point, although 65 percent subsequently left active duty within one year after becoming eligible.

Retirement Plans of Active Officers

Officers still on active duty varied widely in the extent to which they have considered retirement and/or made a retirement decision. Thirty-one percent were not considering retirement and had no plans to do so; 45 percent were considering retirement but had not reached a decision; and 19 percent reported that they want to retire or have already decided to retire more than one year earlier than required.

Hypothesis Tests

A Review of the Model and Included Outcomes.

The extended role-choice model: The role-choice model employed in this study combines measures of expectancy, valence, and instrumentality perceptions applicable to the active and retired roles to compute two force scores, the force to retire (Fr) and the force to active duty (Fa). Symbolically,

$$Fr = \left[\text{the lesser of } (E_1) \text{ or } (E_2)\right]\left[\sum_{i=1}^{25} (Vir \times Iir)\right]$$

where: Fr = Force to retire

E_1 = Expectancy that the effort of submitting an official retirement request will result in approval

E_2 = Expectancy of attaining the chosen post-retirement occupation or activity (ARR)

Vir = The perceived valence of the ith role outcome for the retired role

Iir = The perceived instrumentality of the retired role for attaining the ith role outcome

$$Fa = E_3 \left[\sum_{i=1}^{25} (Via \times Iia) \right]$$

where: Fa = Force to remain on active duty

E_3 = Expectancy of being allowed to continue on active duty

Via = The perceived valence of the ith role outcome for the active duty role

Iia = The perceived instrumentality of the active duty role for attaining the ith role outcome

After the Fr and Fa scores have been computed, a prediction of active or retired status is made for each respondent based upon the prediction score (P) which is the difference between Fr and Fa.

Symbolically,

$$P = Fr - Fa$$

where: $P > 0$, retirement predicted

$P < 0$, active duty predicted

Second level outcomes: Twenty-five second level outcomes (rewards and punishments) were included in the role-choice model. It should be noted, however, that the values of lesser numbers of these outcomes were employed to test some hypotheses. The outcomes included and omitted will be listed when specific hypothesis tests are described. When the "basic" model is specified, all twenty-five outcomes are included.

The twenty-five outcomes are listed in Part B, p. 21 of the questionnaire which is Appendix A. Since these outcomes will be

discussed frequently and listed in tables, they have been given shortened titles for easy reference; these titles, together with indications of which outcomes are negatively valent and intrinsically and extrinsically mediated are shown in Table 9.[2]

Results of Hypothesis Tests

Hypotheses of two kinds were tested in this study. Hypotheses one through three are concerned with conceptual issues raised by or growing out of previous expectancy theory research. Hypotheses four through ten involve tests of the extended role-choice model.

Conceptual Hypotheses

Hypothesis 1: Two sub-hypotheses were tested. Hypothesis 1a stated that a role satisfaction measure (S) attained by multiplying each of the valences applicable to the active duty role times the instrumentality of the active duty role for each of the twenty-five outcomes ($S = \Sigma (Via \times Iia)$) would be positively correlated with three measures of job/role satisfaction. The satisfaction measures are (1) the sum of the five Job Descriptive Index (JDI) scales, (2) respondents' overall satisfaction with his treatment by the Navy (Question #22) and (3) whether he would recommend a Navy career to his son (Question II-14).

The second sub-hypothesis (1b) said that a negative correlation would exist between satisfaction with the naval officer role (S) and

2. Appendices D and E contain the means and standard deviations of the valence and instrumentality measures for each of the outcomes.

Table 9: Outcome Abbreviations and Identification of Intrinsic, Extrinsic and Negatively Valent Outcomes

Abbreviations	Category			Outcome
	Neg	Intr	Extr	
1. PERSPOL	X		X	Working in an organization where personnel policies and practices directly affecting me and my future are arbitrarily changed without consultation or agreement with me.
2. PROMOTION			X	Future Promotions.
3. COMARAD			X	A feeling of camaraderie among the members of the organization.
4. WIFESAT			X	Having my wife and/or children satisfied with the nature of my job and its demands.
5. RECOG			X	Working for an organization that recognizes my contributions.
6. FAMSEP	X		X	Frequent separation from my family of more than a few days duration because of the demands of my job.
7. FUTUREJOB			X	Having future job assignments I prefer.
8. JOBEXCIT			X	Having a job or profession that provides adventure, zest, or excitement.
9. SECURITY			X	Making enough money to provide for future needs and security.
10. TRANSFER	X		X	Relatively frequent transfers to a new location and job.
11. BADJOB	X		X	Having a job I don't like.
12. SLFESTEEM		X		A feeling of pride and self-esteem in the way I earn my living.
13. INVOLRET	X		X	Being involuntarily retired before I want to retire.

Table 9: (continued)

Abbreviations	Category			Outcome
	Neg	Intr	Extr	
14. AUTHORITY			X	Considerably more authority and responsibility.
15. JOBIMPORT		X		A feeling that my job and what I do are important.
16. CHALLENGE		X		Having a job where there will be challenge and opportunity for personal growth.
17. DOUBLE $			X	Earning twice as much money.
18. JOBPRESS	X		X	Being under a great deal of pressure in my job.
19. INCHARGE			X	Being in charge of an organization.
20. LOCATION			X	Living in a place I am happy to live in.
21. ACCOMPLISH		X		A job which gives a feeling or worthwhile accomplishment.
22. INEQRULES	X		X	Working in an organization where there are arbitrary and/or inequitable rules, regulations or policies which I or my immediate superiors in the organization are powerless to correct.
23. FULFILLMENT		X		Feeling of self-fulfillment.
24. INDEPENDENCE			X	Opportunity for independent thought and action.
25. JOBSAT		X		A great feeling of satisfaction from my work.

Neg = Negatively Valent Outcome
Intr = Intrinsic Outcome
Extr = Extrinsic Outcome

retirement.

Hypothesis 1a results: This hypothesis received limited support. Correlations between S and the three satisfaction measures ranged from moderate to low with .467, the highest correlation, occurring between the total JDI and Σ(Via x Iia); the overall role satisfaction measure (question #22) was nearly as high with r = .424. The measure concerning a Navy career recommendation yielded a correlation of .267.[3] The inter-correlation between the JDI total and the measure of overall satisfaction with the Navy role was .375.

Overall, these correlations suggest that Σ(Via x Iia) has a moderate relationship to both job satisfaction and role satisfaction but that job satisfaction and overall satisfaction with the Navy as measured here are different with a relatively small amount of variance over-lap.

Hypothesis 1b results: This hypothesis said that a negative correlation would be found between satisfaction with the naval officer role (S) and retirement. With retirement status coded 0 (retired) and 1 (active), a correlation of .287 ($p < .001$) was found. Thus the results support the hypothesis. As a practical matter, however, this correlation was not large enough to support the inference that this measure of satisfaction with the naval officer role would by itself be a useful predictor of early retirement.

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3. A substantial number of respondents commented that they would not recommend the Navy as a career for their son but that this is based upon factors unrelated to their feelings toward the Navy. Consequently, this question appears to have been an inappropriate measure of role satisfaction.

To further examine the relationship between satisfaction and early retirement, the JDI total and overall satisfaction with the Navy measures were each correlated with retirement status. These correlations were .245 and .223 respectively, again suggesting that none of the single measures of satisfaction employed were strong predictors of early retirement.

Hypothesis 1 summary: Our findings relating to these sub-hypotheses suggest that Σ(Via x Iia) is only a moderate indicator of satisfaction with the job held at CDP and of overall satisfaction with the Navy. Moreover the results from testing the second sub-hypothesis show that this variable is not related strongly to retirement. Further, the relatively low correlations found when the JDI total and overall Navy satisfaction measures were correlated with active/retired status suggest that dissatisfaction was not a strong predictor of early retirement.

Hypothesis 2: It was argued earlier that a person's affective orientation toward an outcome (the outcome's valence) is conceptually different from the outcome's importance to that person. Accordingly, it was hypothesized that no relationship would exist between respondents' ratings of the valence and importance of each outcome.

This hypothesis was partially tested by calculating the correlation between the importance rating (one through eight) assigned to each respondent's eight most important outcomes and the average absolute valence ($\left\| \frac{(Vir + Via)}{2} \right\|$) that the person gave for each of these

eight outcomes. Absolute values were employed so that any relationship between extreme measures of valence and importance would be reflected regardless of whether the valence was positive or negative.

Correlations between outcome valence and importance were calculated individually for the active and retired sub-groups and for the combined total. In each case the correlations show a slight tendency for valence to increase (positively or negatively) with an increase in importance, but the relationship is not strong. For active officers the correlation was .154, ($p < .01$), and for retirees, the correlation was .096 ($p > .05$). The combined total of the retired and active officer values yielded a correlation of .118 ($p < .01$).

These correlations suggest that although there is a slight relationship between valence and importance, it is so small that the hypothesis of independence is essentially correct.

Hypothesis 3: Here we were concerned with whether the valence of an outcome changes depending upon its role-related frame of reference or whether people have a single perception of the valence of a given outcome. We advanced the hypothesis that valences would be significantly different when evaluated for two different roles.

To ascertain whether Va measures are significantly different from Vr measures and whether any differences found are unique to active or retired officers, two kinds of tests were performed separately for each of the two sub-groups. First the Va measures for each of the twenty-five outcomes were correlated with analogous Vr measures.

Following this, t tests were computed to determine whether differences exist between pairs of valence measures (i.e., V1a with V1r, V2a with V2r, etc.)

Results: The first test, although not conclusive, suggested that the two measures of valence are different. Correlations between each Va and Vr for the twenty-five outcomes ranged from .257 to .713 among retirees, with a median correlation of .419. For active officers this range was .223 to .659 with a median correlation of .472. When these correlations were ranked one through twenty-five for the active and retired sub-groups, a rank order correlation of .457 ($p < .001$) was found, showing only moderate agreement between correlation ranks of the two groups. These correlations and ranks are shown in Table 10.

These findings suggest that some pairs of valence measures (i.e., those displaying the lowest correlations) are different. The test proved inconclusive for those having higher correlations, however.

Because of the inconclusive results just discussed, a second within person test was conducted. The appropriate test is a t test which takes into account that the two measures are not independent and bases significance upon within person difference scores (see Dixon and Massey, 1969, pp. 122-123). The t test results which are shown in Table 11 indicate that Vr and Va were significantly different for all but three of the twenty-five outcomes for the retirees and for all but five of the twenty-five outcomes for the active personnel.

Hypothesis 3 summary: Results of the two tests of this hypothesis suggest that for the most part the valence of outcomes was evaluated

Table 10: Valence Comparisons (Vr with Va) of Role-related Outcomes

Outcome	Retirees		Active	
	Correlation	Rank	Correlation	Rank
1. PERSPOL	.266	24	.223	25
2. PROMOTION	.305	21	.282	23
3. CAMARAD	.547	3	.440	16
4. WIFESAT	.423	12	.560	4
5. RECOG	.326	18	.411	20
6. FAMSEP	.450	9	.659	1
7. FUTUREJOB	.257	25	.254	24
8. JOBEXCIT	.528	4	.567	3
9. SECURITY	.330	19	.490	12
10. TRANSFER	.439	10	.518	7
11. BADJOB	.374	16	.290	22
12. SLFESTEEM	.316	20	.519	6
13. INVOLRET	.601	2	.430	17
14. AUTHORITY	.461	8	.509	8
15. JOBIMPORT	.292	23	.411	20
16. CHALLENGE	.381	15	.512	9
17. DOUBLE $	.487	7	.472	13
18. JOBPRESS	.713	1	.640	2
19. INCHARGE	.504	6	.457	14
20. LOCATION	.517	5	.420	19
21. ACCOMPLISH	.303	22	.452	15
22. INEQRULES	.395	14	.430	17
23. FULFILLMENT	.433	11	.503	11
24. INDEPENDENCE	.332	17	.557	5
25. JOBSAT	.419	13	.506	10

Table 11: Valence Comparisons (Vr with Va) of Role-related Outcomes Using t Tests

Outcome	Retirees t**	Active t**
1. PERSPOL	-7.27	-5.17
2. PROMOTION	0.02(ns)	0.08(ns)
3. CAMARAD	-2.38*	-0.51(ns)
4. WIFESAT	5.26	9.06
5. RECOG	6.32	7.51
6. FAMSEP	-4.02	-5.00
7. FUTUREJOB	4.25	4.36
8. JOBEXCIT	-0.23(ns)	1.10(ns)
9. SECURITY	3.35	2.63
10. TRANSFER	-6.39	-5.53
11. BADJOB	-9.16	-8.33
12. SLFESTEEM	4.90	5.51
13. INVOLRET	-1.19(ns)	-1.15(ns)
14. AUTHORITY	-2.82	-2.97
15. JOBIMPORT	2.76	1.50(ns)
16. CHALLENGE	4.13	2.65
17. DOUBLE $	3.10	2.14*
18. JOBPRESS	-3.16	-5.23
19. INCHARGE	-3.21	-5.87
20. LOCATION	7.71	8.59
21. ACCOMPLISH	4.96	4.20
22. INEQRULES	-5.38	8.20
23. FULFILLMENT	5.07	5.21
24. INDEPENDENCE	5.42	5.70
25. JOBSAT	6.03	4.78

* ($p < 05$)
** All values not marked otherwise are significant ($p < .01$)

differently by respondents depending upon the context for which it was being evaluated.

Hypotheses Relating to the Extended Role Choice Model

General hypothesis: The general hypothesis said that this model would accurately distinguish between active duty and retired officers.

Three kinds of data were employed as a basis for judging the accuracy for this and subsequent tests of the model described in succeeding specific hypotheses. First, the percentages of correct and incorrect predictions were examined. The second test used was a statistical test, the Index of Mean Square Contingency, phi (Hays, 1963, p. 604), a special case of the product moment-correlation appropriate for showing relationships between two dichotomous distributions (Nunnally, 1967, p. 199). Since the amount of variance explained or "usefulness" (Darlington, 1968) of the model's predictor (P) and its components cannot be shown by squaring phi, as a third test multiple correlation coefficients were calculated to show the relationship between P and the actual status of respondents, coded 0,1.

Results of general hypothesis: The basic role-choice model was correct in 62.6 percent of its predictions, yielding a phi coefficient of .319 ($p < .001$) and a Multiple R of .369 ($p < .001$).

Table 12 summarizes these results.

Hypothesis 4: It was suggested earlier that when a person cognitively evaluates the overall attractiveness of retirement, two expectancies are involved, the subjective probability of being permitted

Table 12: Accuracy of Extended Role-Choice Model with Twenty-five Outcomes[4]

		Actual Status: Retired	Actual Status: Active	% Correct
Predicted Status	Retired	232	210	52.4%
	Active	51	204	80.0%
	TOTAL		697	62.6%

to retire by the Navy (E_1) and of attaining the anticipated retirement role (E_2). It was further suggested that when one of these expectancies is lower than the other, this lower probability governs the overall force score because the lower probability serves as a restraining influence. To determine whether this is so, the model's predictive accuracy was tested by computing the force to retire (Fr) using two alternative expectancy values.

The alternatives are (1) the lesser of the two Expectancies presumed to affect the retirement decision---the Expectancy of being allowed to retire (E_1), and of attaining the Anticipated Retirement Role (E_2), or (2) an average of the two values ($\frac{E1 + E2}{2}$).

4. Similar tables will be employed throughout this chapter to show the effects of modifications of the role-choice model. Differences in the numbers of respondents among these which the reader will note result from the fact that when the force to retire equals the force to active duty, no prediction is made and that case is removed from the calculations.

Comparing predictions using the lesser of E_1, E_2 with those using $\frac{E_1 + E_2}{2}$, we found the results shown in Table 13.

The phi coefficients using the lesser and averaged configurations are .317 and .296 respectively. This difference is not significant. Thus the null hypothesis that the two measures are not significantly different was supported.[5]

Table 13: Comparison of Alternative Expectancy Model Configurations

			Actual Status: Retired	Actual Status: Active	Totals	Prediction Accuracy
Predicted Status	Retired	Lesser of E_1, E_2	232	210		52%
		$\frac{E_1 + E_2}{2}$	248	247		50%
	Active	Lesser of $E_1 + E_2$	51	204		80%
		$\frac{E_1 + E_2}{2}$	37	167		82%
	TOTALS				697 699	62.6% 59.4%

Hypothesis 5: This hypothesis stated that more accurate predictions of an officer's behavior could be made based upon his valence,

5. The lesser of the two expectancies was used to compute Fr in all of the remaining hypotheses in this study.

instrumentality and expectancy perceptions relating to both the active and retired roles than could be made using only perceptions applicable to the active duty role. This assumption is based upon Vroom's (1964) notion that both outside and inside "pushes" and "pulls" affect individual's decisions to leave a job.

Results: This hypothesis was tested using multiple correlation coefficients to examine the relative usefulness of Fa and Fr in explaining actual active duty/retired status. These components of the model were introduced stepwise to determine whether components relating only to the active duty role would yield results as good or better than a regression containing measures relating to both the retirement and active duty roles. Although the measures relating to the active duty role were found to be more useful[6] than were components relating to the retired role, the components pertaining to the retired role increased the R of the equation significantly. When Fr and Fa were introduced stepwise with retired/active status as the dependent variable, Fa yielded a multiple R of .285 ($p < .01$), which increased to .372 when Fr entered the equation.[7] This suggests that, as stated by the hypothesis, an assessment of both inside and outside "pushes" and "pulls" helps to explain the retirement decision.

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6. The term "usefulness" is employed here rather than "variance explained" in recognition of Darlington's (1968) argument of the inappropriateness of the latter term when variables are intercorrelated.
7. The criterion for entering each new variable was an F-ratio for that variable significant at or below .05.

Hypothesis 6: The assumption has been made by many that a maximum number of potentially relevant outcomes should be included in an expectancy model. It has been assumed that irrelevant outcomes are discounted by the multiplicative nature of the model with any outcome having a valence of zero exerting no effect on the model's prediction. Although this argument is conceptually appealing, Mitchell and Biglan (1971) report research by Rosenberg (1956) suggesting that "attitudes may depend on only a small number of values that are important to the individual (p. 438)."

This line of reasoning led to the two sub-hypotheses tested here: (1) whether a lesser number of the most important second level outcomes used in the role choice model will give predictions as good as those attained using all twenty-five outcomes (hypothesis 6a) and (2) whether a lesser number is useful only when the outcomes chosen are the ones most important to respondents (hypothesis 6b).

To test the hypothesis that a lesser number of outcomes would not significantly reduce the predictive accuracy of the model, we compared the accuracy of three sets of predictions; subsequently, a fourth set of predictions were computed to further clarify the results already observed. The model was first computed using the eight outcomes each respondent had identified as being "most important...for choosing to retire or not retire..." Following this, the same procedure was performed using eight outcomes chosen randomly from the twenty-five, with a different random selection made for each respondent. These predictions were compared with each other and with the basic twenty-five

outcome model's predictions. Based upon the results of these comparisons, a fourth configuration was computed to determine the relative accuracy of the predictions when each respondent's five most important outcomes were employed.

The results obtained are shown in Table 14. Using the eight most important outcomes resulted in a predictive accuracy of 68.3 percent and a phi coefficient of .425. This compares with a predictive accuracy of 62.6 percent and a phi coefficient of .319 using the basic model. The difference between those phi coefficients, using a t test (Hotelling, 1940), is significant ($p < .01$). A comparison of these two model configurations (Table 14) shows that approximately equal proportions of increased "hits" and decreased "misses" occurred among retirees and active officers using the eight most important outcome model. This modification of the model increased the accuracy of predictions from 52.4 to 57.3 percent for respondents expected to be retired and from 80.0 to 85.5 percent for those expected to be active.

To determine whether a still smaller number of outcomes would achieve further gains in accuracy, the model was run again, this time using each respondent's five most important outcomes. This resulted in a slight decrease to 67.5 percent correctly classified and a phi coefficient of .413. The results achieved using eight randomly selected outcomes showed a further decrease in accuracy to 61.5 percent and a significantly lower phi coefficient of .288.

Hypothesis 6 summary: Hypothesis 6a and 6b were supported. These results suggest that a model employing a relatively small

number of outcomes will result in increased accuracy only when the outcomes are important to the subjects. They also suggest that there is a minimum number of outcomes below which accuracy decreases.

Table 14: Comparison of Basic Role-Choice Model with Alternative Configurations Using Fewer Outcomes

25 Outcomes

Predicted \ Actual	R	A	Accuracy
R	232	210	
A	51	204	
phi = .319	697		62.6%

8 Most Important Outcomes

Predicted \ Actual	R	A	Accuracy
R	243	181	
A	39	230	
phi = .425	693		68.3%

8 Randomly Selected O/C

	R	A
R	225	208
A	59	201
phi = .288	693	61.5%

5 Most Important O/C

	R	A
R	241	184
A	39	223
phi = .413	687	67.5%

Hypothesis 7: The literature on expectancy theory contains a number of suggestions that intrinsically mediated outcomes have greater motivational potential than extrinsically mediated outcomes. To assess the validity of the assumption for this sample, we tested the hypothesis that intrinsically mediated outcomes employed together in the model

would discriminate more accurately between active and retired respondents than extrinsically mediated outcomes. The test was conducted by employing the role-choice model to make separate retirement status predictions using first the six intrinsic outcomes and subsequently the nineteen extrinsic outcomes and comparing the results. Outcomes defined as being intrinsically mediated were:

#12. A feeling of pride and self esteem in the way I earn my living.

#15. A feeling that my job and what I do are important.

#16. Having a job where there will be challenge and opportunity for personal growth.

#21. A job which gives a feeling of worthwhile accomplishment.

#23. Feeling of self-fulfillment.

#25. A great feeling of satisfaction from my work.

Following the definitions given in Chapter III, the remaining nineteen outcomes are extrinsically mediated.

With the six intrinsically mediated outcomes included, the role-choice model correctly classified 54.9 percent of the respondents predicted as being retired and 73.3 percent of those expected to be on active duty, a combined accuracy of 64.2 percent. This level of accuracy results in a significant ($p < .01$) phi coefficient of .287.

Employing only extrinsically mediated outcomes, the percentages of correct classifications are 51.5, 81.9, and 61.1 percent for retired, active, and total respondents respectively and a significant ($p < .01$) phi coefficient of .316. Thus the hypothesis that intrinsically mediated outcomes alone result in more accurate discriminations than

extrinsically mediated outcomes is not supported.

Although little change in overall accuracy resulted, this separation of intrinsically and extrinsically mediated outcomes gave quite different prediction patterns. Unlike the earlier comparison of the model using twenty-five and eight outcomes where the changes were fairly uniform from cell to cell in the contingency table, changes from intrinsic to extrinsic outcomes resulted in an uneven change. Using intrinsically mediated outcomes, there were fewer incorrect classifications of officers predicted as being active, while the extrinsic outcomes alone were more accurate in correctly identifying predicted retirees.

Hypothesis 8: Since both punishments and rewards are thought to have motivational potential, the assertion has been made that an expectancy theory model should include negatively valent outcomes. Accordingly, seven outcomes expected to be relevant and negatively valent were included among the total of twenty-five. Abbreviated descriptions of these outcomes are:

#1. Arbitrary personnel policies and practices.

#2. Frequent family separation.

#10. Relatively frequent job transfers.

#11. Having a job I don't like.

#13. Being involuntarily retired.

#18. Being under a great deal of job pressure.

#22. Working in an organization with arbitrary or inequitable rules which I or my superior cannot change.

As expected, most respondents did evaluate these outcomes negatively, although each outcome received some positive evaluations. Mean valence scores are shown in Appendix D.

The hypothesis that negatively valent outcomes would increase the accuracy of predictions was tested by computing two prediction scores for each respondent, one with and one without the seven negatively valent outcomes. The results do not support the hypothesis. In fact, the phi coefficient showed a slight, but not significant, increase (from .319 to .333) when the negatively valent outcomes were removed.

Hypothesis 9: A few expectancy theory researchers have recently offered evidence suggesting that variables not usually included in expectancy theory models may, when used in conjunction with these models, help to explain the behavior better than the expectancy model alone. One reason proposed for these findings is that expectancy models may predict only preferences while situational variables faced by the person sometimes result in behavior contrary to his preferences. This hypothesis concerns three variables: hesitancy to retire, job-related risk-taking propensity, and wife/family opinion which were, as discussed in Chapter III, considered *a priori* to be likely mediators between predilection and retirement behavior among naval officers.

Each of the sub-hypotheses was tested using multiple correlation coefficients to ascertain whether the three variables added a significant increment to R beyond that contributed by P, the prediction score of the role-choice model. Stepwise regression was used in this test

to show the overall usefulness of each variable beyond that of the others already entered in the regression.[8] The P value employed is that calculated using the most accurate modification of the model, the eight most important outcome configuration. Again, the percentages of correct and incorrect predictions, phi coefficient, and multiple correlations were employed to test these sub-hypotheses.

Results: Hypothesis 9a stated that including as an additional model component an index of wife/family retirement influence (previously described in Chapter III) would significantly increase R over that attained using P alone. This hypothesis was supported. The wife/family index correlated .466 with the criterion, retirement status, and P correlated .462. When both were entered stepwise, the wife/family index entered the equation first, giving a multiple R of .466, which increased to .565 when P entered the regression.

Hypothesis 9b results: The hypothesis that a measure of hesitancy to retire or "fear of the unknown" would also be a useful addition to the model was also supported. This variable entered the stepwise regression after P and added a significant increment ($p < .01$) with the multiple R increasing from .565 to .598.

Hypothesis 9c results: The measure of job-related risk-taking propensity (the JPI) was also found to be a useful and significant ($p < .05$) addition to the model, although the incremental addition to R was slight. When this variable entered the stepwise regression, the increase in R was from .598 to .602.

8. The criterion for entering each new variable was an F-ratio for that variable significant at or below .05.

Further analysis of mediating variables: Mitchell and Knudsen (1973) have suggested that expectancy models predict only preference and that one must consider other external variables mediating the preferences to predict actual behavior. Accordingly we might expect that values of the three variables examined in this hypothesis would show differences between people whose behavior was predicted correctly and those for whom predictions were incorrect. Based upon the multiple correlation results for example, we would expect the following: (1) active officers who were incorrectly predicted by the model to be retired would show a wife/family index favoring active duty, greater hesitancy, and lower risk-taking propensity than retired officers predicted to be retired; (2) retired officers who were incorrectly predicted to be active by the model would show a wife/family index favoring retirement.

To determine whether the data supported this line of reasoning, the following steps were taken. Respondents were sub-divided into two groups, those for whom retirement was predicted by the model and those expected to have remained active using the eight most important outcome model. These two groups were then further sub-divided into those actually retired and those who had remained on active duty. Within prediction group comparisons were then made of mean scores on the three variables under discussion to determine whether the expected findings emerged. The results are given below.

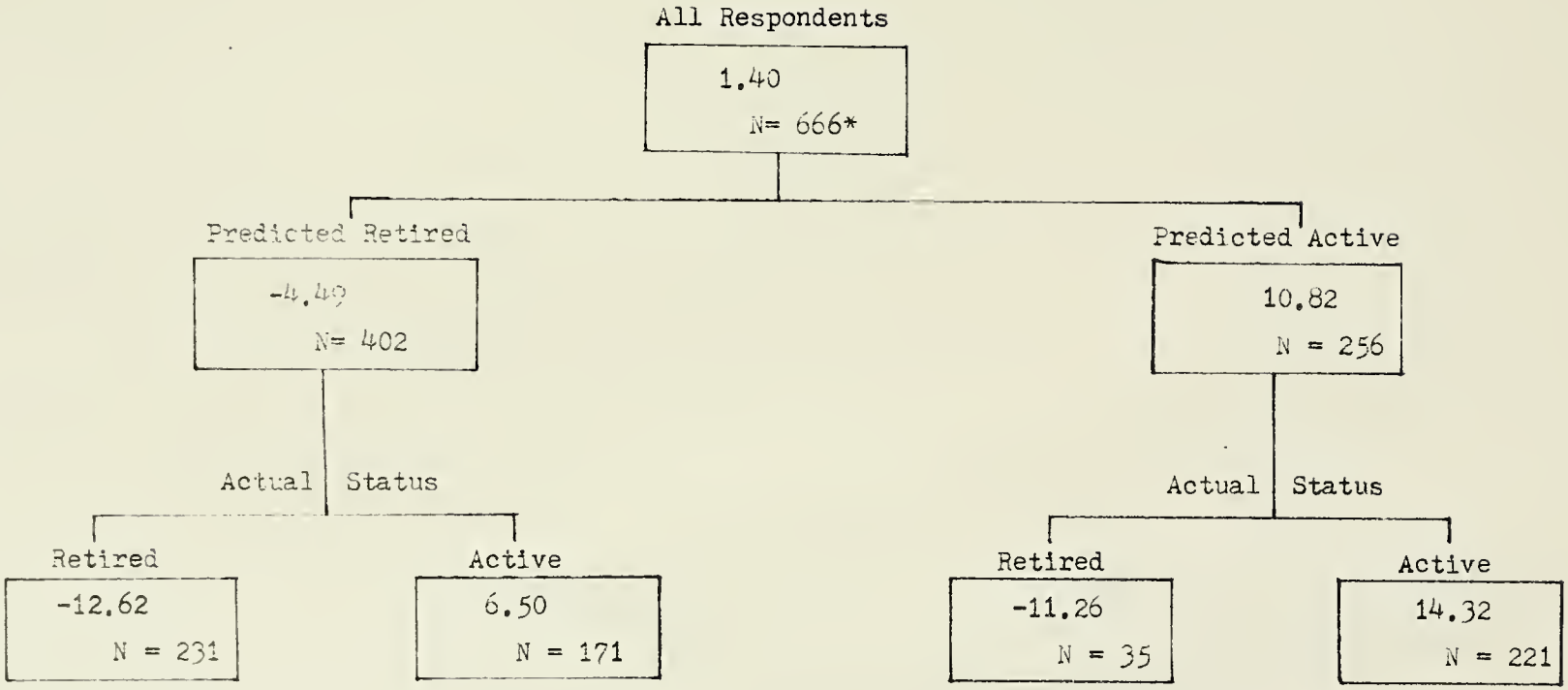
1. Wife/family index: As expected retired officers whose status was predicted by the model as being active had a significantly

different ($p < .01$) score from zero in a negative direction (toward retirement) and active officers for whom retirement had been predicted had a score significantly different ($p < .01$) from zero in a positive direction (toward active duty). These data are shown in Figure 1.

2. Hesitancy to retire: Based upon the rationale advanced here, it would also be expected that among officers for whom retirement was predicted by the role-choice model, those actually retired would show significantly lower hesitancy to retire scores than those already retired. As is shown in Figure 2, the results were as expected. The model had predicted that 424 respondents would be retired; 243 (57 percent) of these predictions were correct. The mean hesitancy score of the group correctly categorized by the model was 1.398; for the 181 respondents whose status was not correctly predicted, the mean hesitancy score was 2.403. These means are significantly different ($p < .001$).

3. Risk-taking propensity: Again, given our assumptions, it would be expected that active officers for whom retirement had been predicted would have lower risk-taking propensity scores than those who were predicted to be retired and were retired. This difference was found, and it was significant ($p < .001$). These data are shown in Figure 3. It is interesting to note that within the group for whom active duty was predicted, there was not a significant difference between the mean risk-taking scores of active and retired sub-groups. Further, examination of mean scores of each prediction group (i.e., active and retired) without regard to actual status shows no significant difference. This leads to the conclusion that job related risk-taking

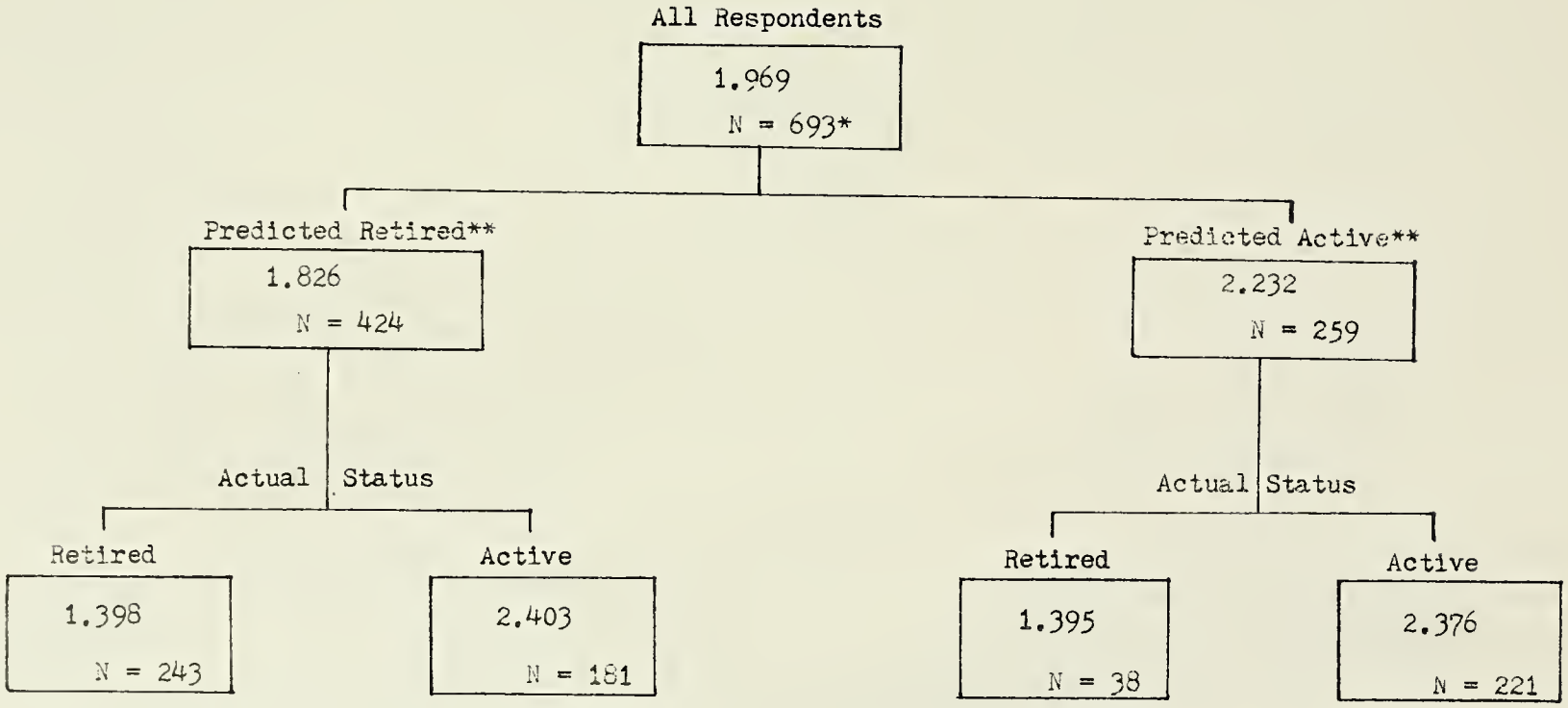
Figure 1: Means of Wife/Family Opinion x Importance Scores



* Includes eight S's for whom no prediction was made because Fr - Fa = 0.

** Source of Predictions: Role Choice Model employing S's eight most important outcomes.

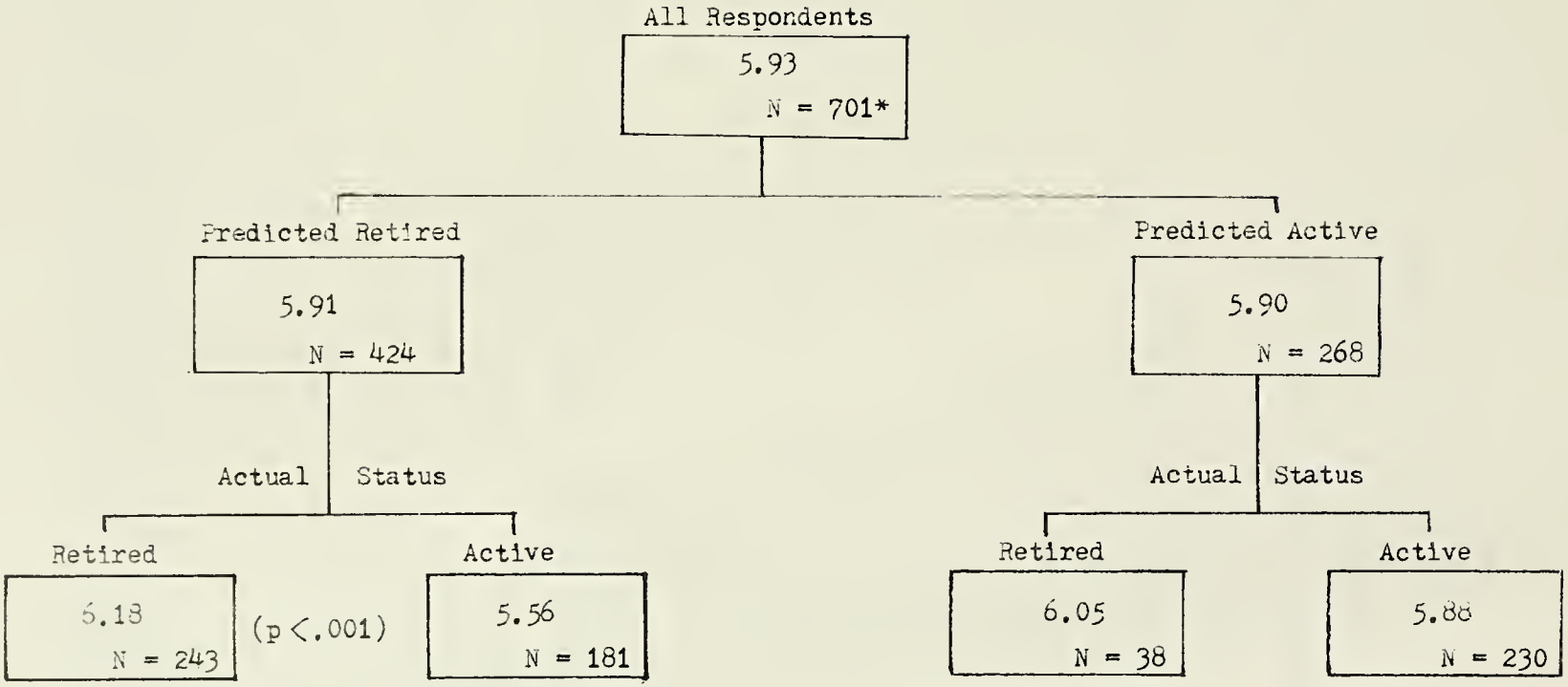
Figure 2: Mean Hesitancy Scores



* Includes 9 S's for whom no prediction was made because Fr - Fa = 0.

** Source of Predictions: Role Choice Model employing S's eight most important outcomes.

Figure 3: Means of Job-Related Risk-Taking Scores



* Includes 9 S's for whom no prediction was made because Fr - Fa = 0.

** Source of Predictions: Role Choice Model employing Ss' eight most important outcomes.

behavior is an important variable only within the group for whom retirement is predicted. Here, the active and retired groups are quite different in score, suggesting that among those having a preference to retire the propensity to take "a well calculated risk" is a significant differentiating factor between those who remain on active duty and those who do not.

Increased predictions using additional variables: In view of the increased Multiple R which resulted from the stepwise inclusion of the three non-expectancy variables, it was expected that including them in the model would increase the overall accuracy of the model's predictions. The following steps were taken to determine whether the accuracy would actually increase. (1) The sample was split randomly into developmental and cross-validation samples with two-thirds of the respondents in the former and one-third in the latter as suggested by Dunnette (1966). (2) A stepwise multiple regression was computed for the developmental sample employing the predictor score (P), and the three non-expectancy variables as independent variables with actual status (coded 0,1) as the dependent variable. (3) Beta weights computed by this regression were used to compute a prediction score for each member of the cross-validation sample.[9] (4) These prediction scores were matched against the actual experience of the officers in the cross-validation sample to test for "shrinkage" in the model's

9. Since the risk-taking score (JPI) did not add a significant increment to R^2 ($p<.05$) among those in the developmental sub-sample (although it did among the entire sample) it was not included in computing these prediction scores. Thus these scores were computed using only P, the wife/family influence index, and the hesitancy score.

accuracy (Guion, 1965).

The optimum cutting score on the prediction scores was determined empirically by examining the accuracy of predictions in the developmental sub-sample using several possible cutting scores ranging from .44 to .59 in increments of .03 (i.e., .44, .47, .50, etc). The optimum cutting score in terms of accuracy and balance (i.e., equally accurate predictions for both sub-populations) was found to be .50. As shown in Table 15, using the extended model (P and two non-expectancy variables), the predictions for the developmental sample were 79.7 percent correct; for the cross-validation sample using this same cutting score, there was no shrinkage; the predictive accuracy was 80.3 percent. These figures compare favorably with a predictive accuracy of 68.3% using the best (i.e., 8 most important outcomes) expectancy model.

Table 15: Predictive Accuracy of Developmental and Cross-Validation Samples Using Role-Choice Model, Wife/Family Influence Index, and a Measure of Hesitancy

Developmental Sample

		Actual R	Actual A	Accuracy
Predicted	R	131	34	79.4%
	A	61	242	79.9%
		phi = .576	468	79.7%

Cross-Validation Sample

		Actual R	Actual A	Accuracy
Predicted	R	75	25	75.0%
	A	21	113	84.3%
		phi = .597	234	80.3%

Summary of Hypothesis 9: It appears that the variables discussed do significantly add to the usefulness of the role-choice model. Further, supplementary evidence presented seems to indicate that the explanatory power of these variables resides in their mediation between the model's prediction, which Mitchell and Knudsen (1973) have characterized as a preference, and the actual observed behavior.

Hypothesis 10: The question which led to this hypothesis is whether the role-choice model is more or less effective than a more traditional multiple regression approach to behavior prediction. Thus the hypothesis to be tested states that the accuracy of an expectancy theory based role-choice model is not significantly different than that of a cross-validated multiple regression model.

The test was conducted as follows. The respondent population was split randomly with two-thirds assigned to the developmental sample and one-third to the cross-validation sample. Next, nineteen variables were selected as possible predictors based upon potential "meaningfulness" (Kerlinger and Pedhazur, 1973). Other predictors which might have been helpful such as performance data, aptitude and personality measures were not available.

The nineteen variables chosen were entered into a stepwise regression with actual retired/active status coded 0,1 as the dependent variable. Data from the 468 respondents in the developmental sample were employed in this regression from which the final list of predictors was to be chosen.

Results of this analysis are shown in Table 16. Six predictors were chosen as adding significantly to the model ($p < .05$). The multiple R of these six predictors is .436 which exceeds the multiple R of the twenty-five outcomes model (.370) but is less than that of the eight most important outcomes model (.462).

The next step was to apply the prediction equation derived using the developmental sample to the 234 respondents in the cross-validation sample. Before this could be accomplished, however, it was necessary to select a cutting score as a basis for predictions. This was necessary because the multiple regression equation produces a single prediction score, the summation of each predictor score times the beta weight supplied by the developmental regression equation. It does not, however, give any information concerning an appropriate cutting score when a dichotomous choice (pass, fail; retire, not retire, etc.) is to be predicted. Such a cutting score was needed in this case to predict which subjects would be active or retired. The available options were to select the score a priori or empirically; the latter was selected.

A cutting score of .53 was chosen because it was found to be the score which would result in the highest level of predictive accuracy for the developmental sample as determined by percentages of accurate predictions and phi coefficients. This value was arrived at by sequentially testing possible cutting scores on the developmental sample, starting with .5, the theoretical cutting score one would have expected based upon the a priori knowledge that the dependent variable was

Table 16: Variables Selected as Possible Regression Model Predictors in Order of Stepwise Inclusion

Question # (Appendix A)	Variable	Significant Predictor?	Multiple R after Inclusion	R^2 Increase
II-3	Civilian Job Assessment Action Taken	($p < .01$)	.288	.083
V1	JDI Total	($p < .01$)	.367	.052
22	Overall Navy Satisfaction	($p < .01$)	.394	.020
II-5	Required Post-Retirement Income	($p < .01$)	.414	.016
II-9	Probable Post-Retirement Financial Success	($p < .05$)	.426	.010
II-8	Anticipated Inheritance Before Age 65	($p < .05$)	.436	.009
9	BA/BS before commissioned?	no		
II-7	Total Indebtedness	no		
VI	JDI Supervision	no		
10	Highest Degree Held	no		
V	JDI Promotions	no		
II-4	Anticipated Retirement Income	no		
V	JDI Work	no		
V	JDI Co-Workers	no		
V	JDI Pay	no		
II-6	Total Worth	no		
22	Number of Dependents at CDP	no		
23	Perceived Promotion Chances at CDP	no		
14	Number of Children at CDP	no		

coded 0,1. It was found that the model's accuracy increased from a predictive accuracy of 71.2 percent and a phi coefficient of .385 at a cutting score of .5 to 71.5 percent and a phi of .395 at .53; it declined thereafter to 68.8 percent and a phi coefficient of .351 at a cutting score of .58.

On the basis of an expected shrinkage formula (Kerlinger and Pedhazur, 1973), R for the cross-validation sample was expected to be .422; it was in fact .452. The phi coefficient of the developmental sample using the empirically derived cutoff was .395, with 71.5 percent of the sample correctly classified; for the cross-validation sample the same cutoff score gave a phi of .339 and 69.2 percent correct classifications. Thus, it is apparent that the cross-validation procedure demonstrated the validity of the regression equation.

Although the multiple regression predictions yielded a significantly lower phi coefficient than that of the eight most important outcome role-choice model, its prediction accuracy is slightly greater. The reason for the higher proportion of correct predictions but lower phi coefficient is found in the pattern of the predictions shown in the contingency tables (see Table 17). Of the 74 respondents expected to be retired, 66.2 percent were retired and 70.6 percent of those expected to be active were categorized correctly. By way of comparison, for the eight most important outcome configuration, 57 percent of the respondents expected to be retired were retired and 85.5 percent of those predicted as being active were active. Thus the phi coefficient (which relies on departures from expected values) resulted in a

larger coefficient for the eight most important outcome model. Despite these differences, however, in practical terms the regression model predicted the retirement decision as accurately as the expectancy model, and the hypothesis that the expectancy model would be superior was not supported.

Table 17: Comparison of Accuracy of Predictions of Eight Outcome Role-Choice Model with Multiple Regression Prediction Model

		Actual Status: Retired	Actual Status: Active	Totals	Prediction Accuracy
Predicted Status: Retired	Expectancy	243	181		57.3%
	Multiple Regression	49	25		66.2%
Predicted Status: Active	Expectancy	39	230		85.5%
	Multiple Regression	47	113		70.6%
	TOTALS			693 234	68.3% 69.2%

Summary of Model-Related Hypotheses

In testing the different hypotheses, the expectancy theory role-choice model was calculated six times using various numbers of outcomes and once using an average of E_1 and E_2 instead of the lesser of these two expectancies. Table 18 shows a summary of these analyses. As described earlier, the least accurate modification was the one using twenty-five outcomes and the average of E_1 and E_2, while the most accurate predictions occurred using the eight most important outcomes.

Average vs. lesser expectancy: In the average expectancy model where $\frac{E_1 + E_2}{2}$ was used to compute Fr instead of the lesser of E_1, E_2 ($E_{1/2}$), more actual retirees and fewer active officers were correctly identified. The reason seems rather straightforward. The overall effect of averaging the retirement expectancy measures tends to raise the value in comparison with the lesser of the two. This increases the force to retire score with no change in the force to active duty. The obvious result is an increase of retirement predictions among persons whose Fr and Fa scores are nearly equal. Comparing results of $E_{1/2}$ with $\frac{E_1 + E_2}{2}$ using twenty-five outcomes, it is apparent that there was a switch of 14 previously incorrect classification (from 51 to 37) into the predicted retirement category and correct identification of two "no prediction" respondents (i.e., Fr - Fa = 0). This also resulted in 37 more incorrect predictions for respondents previously correctly predicted as being active, however. This had the overall effect of decreasing total accuracy from 62.6 percent to 59.4 percent.

Negatively valent outcomes: When negatively valent outcomes were removed from force score computations the proportion of correct classifications increased from 62.6 percent to 65.8 percent. The probable reason is that these negatively valent outcomes were not highly relevant. When the number of "eight most important" choices given to each outcome are considered, the negatively valent outcomes ranked 14, 15, 18, 19, 20, 24, and 25 for the retired and 18, 19, 20, 21, 22, 23, and 25 for the active duty group. Thus the increase in accuracy when they are removed is probably an artifact of the previously described effect of using only more important outcomes to compute force scores.

Five, eight and twenty-five outcome models: In terms of successful classifications, the eight most important outcome model was most successful of the expectancy models with 68.3 percent accuracy; the five most important outcome model was slightly less effective. The basic model employing twenty-five outcomes showed a rather uniform decrease of about five percent in accuracy for both active and retired officers yielding an overall accuracy of 62.2 percent. The eight randomly-selected outcome model was the least effective of these four configurations, but only slightly less effective than the basic model.

Of interest in Table 18 are the differing prediction patterns of the various configurations. For example the decrease in accuracy from the eight to the twenty-five outcome model is fairly uniform with the accuracy of correct retirement and active predictions reduced

Table 18: Predictive Accuracy of Different Role-Choice Model Configuration

25 Outcomes

Actual

Predicted	R	A	Accuracy
R	232	210	
A	51	204	
phi = .319	697		62.6%

$\frac{E_1 + E_2}{2}$

Actual

Predicted	R	A	Accuracy
R	248	247	
A	37	167	
phi = .296	699		59.4%

8 Most Important O/C

	R	A
R	243	181
A	39	230

phi = .425 693 68.3%

Intrinsic O/C Only

	R	A
R	188	154
A	93	255

phi = .287 690 64.2%

8 Randomly Selected O/C

	R	A
R	225	208
A	59	201

phi = .288 693 61.5%

Extrinsic O/C Only

	R	A
R	245	231
A	40	181

phi = .316 697 61.1%

5 Most Important O/C

	R	A
R	241	184
A	39	223

phi = .413 687 67.5%

Positively Valent O/C Only

	R	A
R	207	161
A	78	252

phi = .3313 698 65.8%

by about 5 percent. This uniformity is also present in the five and eight randomly selected outcome configurations as well. This uniformity is not present in other modifications, however.

Intrinsic/extrinsic outcomes: When compared to the twenty-five outcome model, the intrinsic model gave a slightly higher percentage of accurate predictions whereas the extrinsic only prediction accuracy was slightly lower. The "intrinsic only" and "extrinsic only" models give rather different patterns with the former predicting correctly a greater proportion of the respondents who actually remain on active duty, while the latter is less effective in identifying active duty officers but superior in identifying retirees.

Reasons for Uneven Predictions by the Model

A review of Table 18 shows that in almost all tests of the role-choice model, greater accuracy was achieved in its active duty predictions than for its retirement predictions. Subsequent analysis showed that this occurred because the *a priori* cutting score of zero (i.e., predictions based upon whether P was greater or lesser than zero) was not optimum. When various cutting scores were tested empirically (e.g., P-10, P-20, etc.) after the fact using the eight most important outcome model, the optimum balance in terms of predictive accuracy among active and retired officers was achieved using a cutting score of P + 25 (i.e., Fr - Fa + 25).[10] This resulted in an overall accuracy

10. The differential of twenty-five found in this case represents approximately ten percent of the possible range of force scores (i.e., from -128 to +128).

of 72.8 percent, 70.1 percent among those predicted to be retired and 74.2 percent for those expected to be active. A seemingly plausible explanation for this finding is that when a person is already in a role (active duty naval officer in this case), the force necessary to induce him to leave that role must reach a certain level above the force to remain before he overcomes existing inertia and actually decides to leave.

Analysis of the Usefulness of Model Components

Previous expectancy theory studies have reported considerable variation in which components of their models were useful for explaining the behavior of interest. A similar analysis of the extended role-choice model employed in this study was made using multiple correlation analysis.

The initial step in this analysis consisted of a stepwise regression in which the three expectancy measures, the sums of valences and sums of instrumentalities were independent variables and current retired/active status (coded 0,1) was the dependent variable. In the second step, the same procedure was applied to the three expectancy measures and the sum of valences times instrumentalities for each of the two roles (i.e., the next level of complexity in combining the components); independent variables in this step were $E_{1/2}$; E_3; Σ(Vir x Iir); and Σ(Via x Iia). The third stepwise regression contained the principal components of the model, force to retire and force to active duty (Fr; Fa), the multiplicative combination of the components tested

separately in the two previous steps. The final regression employed the model's predictor (Fr - Fa = P) as the single independent variable. In all regressions the criterion for entry of an additional variable was an F-ratio significant at or below the .05 level.

Table 19 gives a summary of the results of this analysis. Overall, these results seem to support the following conclusions:

1. Instrumentality represents the single most useful component in both models, with the instrumentality of the active role (Σ Ia) being the most important of the two.

2. The higher multiple correlation coefficients attained by combining valence and instrumentality multiplicatively in the second regression support the argument for such a combination of these components.

3. The two final regression steps do not support Vroom's (1964) contention that multiplying the sum of the valences times instrumentalities by expectancy ($E\left[\Sigma(V \times I)\right]$) is superior to an additive model, and in practical terms, expectancy measures exerted little influence on the model's predictions.

4. Subtracting the force to active duty (Fa) from the force to retire (Fr) was very useful as an a priori means of establishing an individualized cutting score for each person, but this did not significantly affect the model's predictive accuracy. This is shown in Table 19 (third and fourth regressions) where the multiple R of the eight most important and twenty-five outcome models decreased slightly when P was employed as the sole predictor (regression four)

Table 19: Analysis of Role-Choice Model Components Using Stepwise Regression

First Regression. Components entered: Lesser of E_1, E_2 ($E_{1/2}$); E_3; Σ Vr; ΣVa; ΣIr; ΣIa

Significant Components (25 Outcomes)	Multiple R	Significant Components (8 Outcomes)	Multiple R
ΣIa	.235	ΣIa	.370
ΣIr	.299	ΣVr	.394
		Ir	.430
		Lesser $E_{1/2}$	.440

Not Significant (.05):

$E_{1/2}$; E_3 ΣVi; ΣVa	E_3; ΣVa

****

Second Regression. Components Entered: $E_{1/2}$; E_3 Σ(Vir x Iir); Σ(Via x Iia)

Σ(Via x Iia)	.287	Σ(Via x Iia)	.409
Σ(Vir x Iir)	.373	Σ(Vir x Iir)	.466
$E_{1/2}$	.380	$E_{1/2}$	.475

Not Significant (.05):

E_3	E_3

****

Third Regression. Components entered: Fr; Fa

Fa	.285	Fa	.410
Fr	.372	Fr	.470

****

Fourth Regression. Components entered: Fr - Fa = P

.370	.462

from the values found when Fr and Fa were entered stepwise as separate predictors (regression three).

5. When considered in the context of the twenty-five outcome model, the sum of valences ($\Sigma Vr, \Sigma Va$) alone were not significantly useful; in the eight outcome model, however, the sum of valences of outcomes for the retired role (ΣVr) were the second most useful component; again, the sum of the valences for the active duty role (ΣVa) were not significant.

6. The component constructed by taking the lesser of the expectancy of being allowed to retire (E_1) and of attaining the anticipated Retirement Role (E_2) made a small but significant contribution to the model. Supplementary analysis suggests that the primary contributor to this correlation was E_2 since most respondents gave a lower probability for E_2 than for E_1.

7. The expectancy of being allowed to remain in the Navy (E_3) was of no value to the model.

Summary: As a whole, this analysis suggests rather forcefully that the instrumentality of active duty for achieving second-level outcomes is the most useful predictor with the instrumentality of the retired role playing a lesser part. Similarly, although all perceptions relating to the active role have greater explanatory power, the perceptions relating to the retired role make a significant additional contribution to the model's predictive capability.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this study was to increase our understanding of early retirement among naval officers. An individual-oriented, motivational perspective was employed because the decision process of specific individuals rather than their aggregate characteristics was of primary interest.

Using a conceptual and theoretical framework based upon expectancy theory (Vroom, 1964), a role-choice model was formulated. The task of the role-choice model was to distinguish between naval officers who voluntarily retire early and those who don't. The expectancy theory framework was chosen because it is considered to be especially well-suited for predicting and explaining choices among alternatives (Galbraith and Cummings, 1967; Graen, 1969).

Goals and Procedures

Goals

The study had three main goals. The first was an initial assessment of the usefulness of the role-choice model and a number of modifications of the model for predicting retirement decisions. Second, hypotheses drawn from theoretical and conceptual issues recognized in earlier expectancy theory research were to be tested. The third goal was to examine the data gathered using the self-report

questionnaire to determine if identifiable differences would be found between active and retired respondents.

Procedures

The subjects were randomly selected naval officers who became eligible for retirement during a recent three year period. The total sample size was 1142. More than 74 percent of the questionnaires were returned. After unusable questionnaires were put aside, a primary sample of 288 retired and 414 active officers remained.

A concurrent design was used. Perceptions were taken retrospectively, based upon respondents' reports of how they felt at the time they decided whether or not to retire at (or near) earliest eligibility.

Summary and Conclusions

This section contains a summary of the results of this study including conclusions relating to early retirement among naval officers and the predictive capabilities of the role-choice model.

Demographic Differences and Retirement Status

Active officers and retirees show few demographic differences. Marital status, number of dependents, age, educational achievement and various objective indices of financial status are markedly similar. Both groups were also similar in the limited retirement preparations they had made. Few members of either group had taken positive steps to seek a post-retirement career or to assess their potential for success

in a second career. One difference, however, is that of the seventy-four officers who had taken more than one such action, all but sixteen were retired.

The absence of objective differences between retirees and active officers was somewhat unexpected in one respect. Preliminary interviews had led to the expectation that numbers and ages of children and the timing of the children's higher education would be a factor strongly affecting retirement decisions. This factor was not apparent, however.

It appears that if one desires to understand or predict the retirement decisions of naval officers, he must look to the perceptions and attitudes of the decision-maker. As will be discussed later, he must also consider the attitudes of wives and families and the importance the officer gives to these opinions.

Satisfaction and Retirement

Early retirement among naval officers is to a great extent analogous to worker turnover, which most studies have found to be negatively related to work satisfaction (Vroom, 1964; Porter and Steers, 1973). Three measures of satisfaction were examined in the context of this study---the Job Descriptive Index (JDI); a measure of satisfaction (Σ (Va x Ia)) postulated by Mitchell and Albright (1972); and a measure of overall satisfaction with the Navy. These measures apparently tap different dimensions of satisfaction, however, as shown by inter-correlations between the three ranging from .38 to .48.

The results of this study show a relationship between satisfaction

and remaining on active duty, but its strength varies from moderate to low depending on the measure of satisfaction used. Correlations between retired/active status and the JDI and overall satisfaction with the Navy were quite weak (.245 and .223 respectively). This suggests that job satisfaction as usually defined is not closely related to the retirement decision.

By way of contrast, the role satisfaction measure (Σ (Va x Ia)) proposed by Mitchell and Albright (1972) had a somewhat higher correlation of .41 with retired/active status.[1] This correlation is similar to the .47 Mitchell and Albright (1972) found between the same measure of role satisfaction and the reported intention of younger officers to remain in the Navy.

The three measures of satisfaction differ in two ways, the focus of the satisfaction and the time-frame to which they refer. The satisfaction with the Navy measure is global and oriented to the past (i.e., "to what extent have you been satisfied with the overall treatment..?"), while the JDI relates to the specific job held at the CDP---a more present-oriented measure. The expectancy measure is future-oriented and global in that it is concerned with the question, "How much satisfaction do you expect to get?" It seems possible that it is this difference in focus and time perspective which explains the higher correlation between this last variable and retirement status because an individual's action is more likely to be related to what he expects from the future rather than his satisfaction with the present

1. As will be discussed later, this variable was also the single most useful component of the role-choice model.

or past.

Effectiveness of the Extended Role-Choice Model

The basic formulation of the role-choice model was moderately successful in identifying active and retired officers correctly; its predictive accuracy was 62.6 percent. The model was much more successful in its predictions of active duty officers than of retirees. Eighty percent of the former predictions were correct compared with 52.4 percent of the latter. This is largely accounted for by the finding that, contrary to the assumption of the role-choice model, a number of people with an Fr score in excess of their Fa score did not retire. When the cutting score was changed to P + 25 points, the percentage of accurate predictions between the two groups became more nearly balanced. Some evidence discussed later in this section also suggests that a significant proportion of the incorrect predictions may have occurred because the role-choice model measures preference for retirement, which is but one component of the final decision to retire, rather than the decision itself.

Components of the Role-Choice Model

Two different aspects of the model's components were investigated in this study. The questions examined were (1) are valence perceptions situation specific? and (2) which components of the role choice model are most useful?

Situational effects on valence perceptions: This study is believed to be unique in its examination of whether valences of second level outcomes

are related to context. The results show that valence did vary with context. This suggests that in future expectancy theory research, valence assessments should be considered in the context for which behavior is to be explained, and where mutually exclusive alternatives exist, as was the case here, two assessments of valence are appropriate. Further research needed to clarify this issue is discussed later in the chapter.

If employees do, as our data suggest, assess the valence of outcomes differently depending upon the job context, the task of reseachers and practitioners concerned with worker motivation and satisfaction could become more difficult. Heretofore our theory and practices have rested on the implicit assumption that valences are relatively constant. For example Lawler (1971) cites forty-nine studies of the importance (valence) of pay to workers. His summary of this research suggests that researchers regard the valence of pay as an enduring quality of people, and although he notes that the valence of pay can change, Lawler suggests that the valence of pay could be useful as a selection tool.

Our findings would argue, however, that Lawler's argument is valid only to the extent that pay will continue to be equally valent to the person in the job for which he is being considered. To insure that this is so, it might be more appropriate to anchor the measurement of the valence of all relevant outcomes to the context of the job under consideration.

Because valence and satisfaction differ only to the extent that

valence is anticipated satisfaction, it seems appropriate to ask if satisfaction with job outcomes also varies across situations. If it does, a re-evaluation of the uses of job satisfaction measures may be appropriate because outcomes which would bring high levels of satisfaction or dissatisfaction in one context may not have this effect in another. For example, if one were to design a job enrichment program based upon an audit of satisfying and dissatisfying outcomes in another setting, the results attained from the introduction of the new program could be much different than expected.

Another implication of this finding concerns counseling. If actual or anticipated satisfaction with outcomes varies across situations, the use of tests measuring satisfaction in the abstract as a basis for counseling could result in dissatisfying job choices by those being counseled. To the extent that our findings are applicable, they suggest that generalized job counseling such as that practiced in many schools and organizations may be somewhat ineffective because it cannot be related to a specific context to which valence measures can be anchored.

Useful components of the model: Among the more puzzling aspects of expectancy theory research have been the inconsistent findings with respect to contributions made by the various components of the model to its overall usefulness. Mobley (1971) found E to be the single component most strongly related to performance. Schwab and Dyer (1973) found E and V to be most closely related to a performance criterion. Using similar criteria, however, Mitchell and Albright

(1972) found that E was not a significant component, while Pritchard and Sanders (1973) identified V as being most useful, and Lawler and Suttle (1973) found E and I to be useful, but not V. In a study of occupational preference and choice, Mitchell and Knudsen (1973) found that I was most closely related to preference and choice.

In this study, the usefulness of the model's components was examined using stepwise multiple regression. The relative importance of the components was examined based upon order of entry into the regression and magnitude and significance of the contribution to R^2. When each separate component of the twenty-five outcome model was examined (ΣI, ΣV, $E_{1/2}$, E_3) only the instrumentality measures (Ia, Ir) proved useful. When the eight most important outcome model was subjected to the same analysis, ΣIa was the most useful component and ΣVr was the next most useful. Subsequent regression analyses also showed that multiplicative combinations of valence and instrumentality measures were more useful than an additive combination of their components. In both the twenty-five and eight most important outcome configurations, it was found that Σ(Va x Ia), Σ(Vr x Ir), and $E_{1/2}$ added a significant increment to R^2.

The analyses described above suggest that instrumentality made the greatest contribution to the model, but weighting I by V added a significant increment, especially in the case of Vr which proved more useful than Ir. E_1 and E_3 had essentially no value for the model because most officers in both categories perceived a high probability of being allowed to retire and to remain active. For the expectancy

of attaining the anticipated retirement role (E_2), there was a significant difference between active and retired officers. Consequently, the lesser of E_1, E_2 was statistically significant although the increase in R^2 was quite small.

An admittedly speculative explanation for these findings can be based upon the conditions in which they were observed. It appears, for example, that expectancy is often the most useful component where instrumentality measures are high and the primary contingency concerns achievement of first level outcomes. This may have been the case in the study of pay and performance by Schwab and Dyer (1973) and of several outcomes and performance by Mobley (1971). Both studies found expectancy to be the most important component, and both were conducted in highly structured piecework plants having incentive pay plans. Conversely, where expectancy has little variance, instrumentality may become the primary component. This might explain the importance of instrumentality to the Fa component in this study and the findings of Mitchell and Albright (1972) that expectancy was not useful. For the Fr component, where expectancy was high and instrumentality was largely unknown, the primary reliance apparently shifted to valence. This might be a partial explanation as well for the finding by Pritchard and Sanders (1973) that valence was the most useful predictor for explaining the behavior of a group of relatively inexperienced postal workers learning a new task.

Summarized, this notion would hold that when instrumentality shows little variance, expectancy will be the most useful component;

when expectancy is uniformly high but instrumentality shows considerable variance, instrumentality will predominate. Finally, where expectancy is high and instrumentality is largely unknown or uncertain, valence may play a more important role. Possible ways to employ this notion to improve the model are discussed below.

Overcoming boundary conditions by modifying model components: Graen (1969) and Dachler and Mobley (1973) recognized possible effects of boundary conditions on their studies of employee performance and specified hypotheses suggesting how these effects might be overcome. Both studies were concerned with employee performance and their proposed solutions emphasized the clarification of work-place contingencies; accurate performance evaluation and appropriate rewards; and removal of situational constraints to high levels of performance. Dachler and Mobley (1973) also noted the need to identify personal and organizational characteristics which constitute boundary conditions.

Boundary conditions which resulted in unpredictable role choices appear to have played a part in this study as well. The suggestions listed above for overcoming their effects are not appropriate for improving predictions of the role-choice model, however, because the contingencies relating to the retired role are unique tc each subject and are generally unknown to both the organization and the individual. In this case the more appropriate strategy (in addition to clarifying contingencies within the organization) would seem to require identification of additional model components and/or modifications of the model which will permit us to make reasonably good predictions despite

environmental uncertainty.

Our findings suggest two approaches to making expectancy models more effective. First, based upon the findings of this study and of several others mentioned earlier it appears that various components of the model (i.e., V, I, and E) may be differentially effective depending upon the level and type of uncertainty perceived by a subject. Accordingly, there is a need to consider in future research whether some modification such as differential weighting of components would be appropriate depending upon the situation. For example in a highly structured piece-rate situation, there is some indication that expectancy perceptions should be weighted more heavily; in a situation such as a retirement decision where expectancy and instrumentality perceptions are subject to great uncertainty, valence might require heavier weights. As already discussed, when a choice is involved, separate measures of outcome valence for each alternative also seem to be indicated. The foregoing suggests that different situations may call for slightly different models which are unique to the boundary conditions of that particular situation.

The second consideration relates to ways of overcoming individual differences which are not accounted for by expectancy models. Turney (1974) presented results suggesting that subjects' irrationality propensity affects model results, and in this study fear of the unknown, risk-taking propensity, and regard for the opinions of family members were found to be quite useful as model components. This suggests that earlier models did not account for all individual difference. It

further suggests that each research context and population should be examined carefully to identify individual difference variables which might be highly relevant predictors of their behavior. Typical of some variables which might be considered are locus of control, need achievement, rationality, and cognitive complexity.

The Results of Variations in the Role-Choice Model

The role-choice model was employed in several configurations while the research hypotheses were being tested. A number of the findings which resulted have implications for future expectancy theory research.

The advantage of two force scores for predicting mutually exclusive choices: March and Simon (1958) and Vroom (1964) suggested that forces inside and outside the context of a job exert an influence on the decision to remain or leave, but previous studies have generally measured only the forces related to the present job.[2] A hypothesis to test this notion, holding that the combined use of force to retire (Fr) and force to active duty (Fa) would be more useful than Fa alone was supported in this study, suggesting that future studies of retirement and other forms of turnover can achieve improved results by considering inside and outside "pushes" and "pulls" which may affect decisions to resign or retire.

Importance of outcomes: One of the more significant findings of this study concerns the role of outcome importance. A number of

2. A recent exception is McLaughlin and Butler (1974) who demonstrated empirically that considering anticipated satisfaction with the characteristics of alternative jobs helped to explain turnover decisions of Army officers.

expectancy theory authors, including Vroom (1966), have treated the terms valence and importance as if they are synonymous. For example, Mitchell (1972) used the terms interchangeably, and Graen (1969) referred to his instrument for measuring outcome valence as an "importance questionnaire" in one place and an "attraction instrument" in another.

It was argued earlier in this paper that valence and importance are different concepts, and a hypothesis was formulated to partially test the validity of this argument. As expected, there was some evidence that these variables are essentially independent. It was also found that outcome importance had a strong effect on prediction accuracy. When other factors were held constant, significantly greater accuracy was achieved using the eight most important outcomes of each respondent than occurred using all twenty-five outcomes or eight of the twenty-five selected randomly. Although all possible numbers of most important outcomes were not tested, when the five most important were used the accuracy of predictions dropped slightly below that achieved using eight, suggesting that there is an optimum number for prediction somewhere between six and eight. This suggests that future studies of expectancy theory should not only include expectancy, valence and instrumentality measures, but also a ranking of the importance of outcomes, anchored to the behavior being studied. It further suggests that the model should be tested using only the most important outcomes.

Although further research will be required to determine whether the importance of outcomes changes with context, associating importance

to a context seems intuitively advisable because a respondent might give different importance ratings to the same outcome in different contexts. For example, we would expect outcomes such as "recognition" or "inequitable work roles" to be given different importance rankings for early retirement leading to a second career than would be the case where the context is total retirement.

The motivational power of intrinsically and extrinsically mediated outcomes: Definitions of intrinsic and extrinsic outcomes in the expectancy theory literature are vague, and assignment of particular outcomes to these categories vary from study to study. Nevertheless, it has been suggested that intrinsically mediated outcomes have greater motivational power than extrinsically mediated outcomes (House and Wahba, 1972). Mitchell and Albright (1972) also reported that intrinsically mediated outcomes were more predictive of role satisfaction and intention to remain in the Navy than extrinsically mediated outcomes.

Using a definition as specific as possible stating that an intrinsically mediated outcome is one not mediated by any force outside the person, we identified six intrinsic and nineteen extrinsic outcomes. When the two sets of outcomes were employed separately in the role-choice model, no significant difference in predictive accuracy was found.

Considering the previously discussed confusion as to what the terms intrinsic and extrinsic mean and the demonstration here that they do not differ in predictiveness, it appears that the usefulness of these terms should be questioned. If they continue to be employed in the absence of clear definitions and a conceptually-based rationale as

to why they should differ in motivational potential, further confusion seems the likely result. Future researchers who desire to employ these terms should as a minimum (1) carefully define them, (2) explain in what ways they affect motivation differently, and (3) demonstrate this difference empirically based upon rigorously stated hypotheses.

The usefulness of negatively valent outcomes: Negatively valent outcomes have become more common in recent expectancy theory studies because both rewards and punishments are thought to have motivational potential (Hackman and Porter, 1968; Mobley, 1971; Pritchard and Sanders, 1973). The seven negatively valent outcomes in this study did not have a significant effect on the predictive accuracy of the model, however. The probable explanation for this is the relative unimportance of these outcomes. In a threatening setting where the most important outcomes were negatively valent, (e.g., where there is acute physical danger), we would hypothesize that negatively valent outcomes would make a greater contribution to predictions.

Enhanced predictive capability using non-expectancy predictors: The addition of three non-expectancy variables (wife/family expectations; hesitancy to retire; risk-taking propensity) as additional predictors significantly increased the usefulness of the role-choice model. This finding is in consonance with those of Mitchell and Nebeker (1973), Mitchell and Knudsen (1973) and Turney (1974) that additional variables unrelated to the expectancy model may enhance predictions. Mitchell (1973) suggests that there is a difference between internally and externally oriented motivation. Most expectancy models deal only

with the internally oriented motivation which, he says, is oriented toward the question "What do I get?" Externally oriented predictors such as the expectations of others are needed, according to Mitchell, as a separate component to account for the effect of these external forces. Mitchell and Knudsen (1973) suggest in a similar vein that an expectancy model shows preference (an attitude), but additional variables such as expectations of others must also be considered before behavior can be predicted. Turney (1974) says that the intrinsic value of the task itself and psychological variables (e.g., irrationality predisposition) must be considered in addition to outcomes the person expects to receive from performing the task.

The results of this study tend to support all of these arguments, especially that of Mitchell and Knudsen (1973). The test of Hypothesis 9 suggests that the three variables described above tended to moderate the prediction score calculated using the model---presumably a measure of preference---such that behavior of groups acting counter to the model's prediction could, by inference, be accounted for based upon these predictors. For example, it was found that respondents whose behavior was incorrectly predicted by the model showed wife/family opinion indices in the direction of their actual behavior and that active officers whose force scores favored retirement reported greater hesitancy to face the unknowns inherent in a decision to retire.

The strongest indication of the usefulness of these non-expectancy predictors was their impact on predictive accuracy. When two of

them[3] were employed in conjunction with the role-choice model predictor (P), the predictive accuracy of the model increased more than 11 percent over the most accurate version of the role-choice model (the eight most important outcome configuration) to 79.9 percent.

The Success of Multiple Regression in Predicting Retirement

A comparison was made between the role-choice model and a more conventional cross-validated multiple regression equation employing the six strongest predictors selected empirically by stepwise regression from among nineteen demographic and attitudinal variables. The predictive accuracy of the multiple regression model was approximately equal to that of the role-choice model. The three kinds of predictors which emerged as most useful in this model were (1) actions taken before the CDP to assess one's suitability for civilian employment, (2) economic factors, and (3) measures of job and role satisfaction.

Although the multiple regression approach is as accurate as the role-choice model, it is atheoretical and its results are difficult to interpret. For example, the JDI and satisfaction with the Navy measures were two of the three strongest predictors using the multiple regression equation, but with the information provided by this model we can only speculate why this is so, particularly in light of the low magnitudes of product-moment correlations between these variables and

3. The risk-taking propensity measure (JPI) was not employed here because it did not make a significant contribution ($p > .05$) to the usefulness of the regression computed for the developmental sub-sample although it did add a significant increment when the regression included the entire sample.

retirement status. Nor can we explain why some economic factors were good predictors and others, ostensibly similar, were not. Finally, the multiple regression approach does not permit a priori prediction of the retirement decision as the role-choice model does.

Evaluation of the Present Study

The Potential of Expectancy Theory Models for Predicting Early Retirement

Reviews of expectancy theory research by Heneman and Schwab (1972) and Wahba and House (1972) suggest that because of the research designs employed, the predictive power of expectancy theory is unknown. Practices which have been criticized in expectancy theory research are (1) confounding of model components, (2) incorrect interpretation and operationalization of instrumentality, (3) using too few second level outcomes, and (4) using what was intended to be a within-person model to explain behavior across subjects. The unavoidable necessity of employing ambiguous or difficult to measure dependent variables has also been a continuing problem.

This study was designed to deal with these problems, and it is believed that the present research represents a reasonable test of Vroom's (1964) model.

The accuracy of the predictions made using the model suggest that a motivational approach to predicting early retirement is feasible and that such a model has potential for practical application. Examination of the findings of this study seem to support the proposition stated earlier that a model such as the one used here is potentially

useful for understanding and predicting early retirement and other forms of turnover in different settings. The potential seems especially great if the improvements discussed earlier (e.g., valence anchored to alternative contexts; the use of two force scores; inclusion of outcome importance; and non-expectancy predictors) are incorporated in the model. Further research needs relating to these modifications of the model are discussed later in this chapter.

Study Limitations

While it is believed that this study represents a fair test of the expectancy theory model and that some of its findings are potentially important, there are two possible limitations of which the reader should be aware.

Dissonance reduction: When it is necessary, as it was in this study, to elicit perceptions after a decision has been made, the possibility that these perceptions will have been distorted by the effects of cognitive dissonance reduction must be recognized. In this study a considerable effort was made to minimize any effects of this kind, and based upon the similarity of several basic findings to those in other expectancy theory studies, the author believes that this effort was successful. This belief cannot be verified empirically however, and the results must be considered as tentative pending replication in a longitudinal study.

Non-ratio scales: An issue raised by Schmidt (1973) is the potential for error introduced in an expectancy model when scales

lacking rational zero points are multiplied (e.g., V x I). Schmidt suggests three means of dealing with this problem. The first is to scale pairs of outcomes and then seek a transformation such that "...the sum of preferences or scores for any two single objects always equals the value or score for the corresponding pair of objects..." (1973, p. 249); there is no a priori guarantee that such a transformation exists, however, and where none can be found, the method is inappropriate. The second alternative requires sequential goodness of fit tests for different combinations of the expectancy components; lastly, Schmidt suggests laboratory studies where model components can be manipulated.

Schmidt's alternatives were not feasible in this study. Considering the number of outcome pairs involved in the study (fifty valence and fifty instrumentality), the first alternative was impractical. The sequential tests of goodness of fit using alternative composition rules for model components was inappropriate because the role-choice model was designed as an a priori predictor. Finally, since this was a study of actual retirement decisions, a laboratory study was also inappropriate. Consequently, it was necessary as suggested by Hackman and Porter (1968), to judge our results in terms of practical validity---the model's success in distinguishing between retired and active respondents. This, however, applies only to the practical predictions of the model, as Schmidt has noted. The possibility that conclusions regarding the theoretical meaning of the results may be incorrect must be recognized.

Implications for Future Research

This study has concentrated on naval officers, but the basic role-choice framework employed is believed to be equally applicable for studying voluntary retirement in other settings as well. Although this is subject to empirical demonstration, the basic formulation also seems equally appropriate for a study of other forms of turnover (Forrest, Cummings, and Johnson, 1973). The major advantage of this approach over more traditional approaches (Barfield and Morgan, 1969; Pollman, 1969; Barfield, 1970) is that it not only has explanatory potential, but it also has a potential capability to predict behavior at an individual level with a level of accuracy which will be of practical use to an organization.

The findings of this study have also re-emphasized the many unknowns facing expectancy theory researchers. The origin and inter-relationships of expectancy model components are not well-understood; we do not know which components are persistent and for how long, or why the various components and combinations of components yield better predictions in one setting than in another. A further enigma is how these components should be combined and whether one procedure is optimum. Moreover, Turney's (1974) research and the findings reported here suggest that individual differences must be considered to a greater extent as moderators of the relationship between behavioral preferences and actual behavior.

Laboratory studies seem especially well-suited for addressing many of these questions because of the rigorous control which can be

exercised and the relatively modest cost in time and effort. Arvey (1972) and Pritchard and DeLeo (1973) have reported good examples of this kind of research. Once greater understanding of all of these issues is developed in the laboratory, they can be incorporated into field research designs in a way which will greatly increase the effectiveness of the field studies. While laboratory research goes forward on issues which cannot be studied readily in a field setting, further field research is needed as well. The remainder of this chapter is devoted to a discussion of further research needs which are suggested by this study.

Early retirement research: A longitudinal replication of this study is clearly called for. This would serve two purposes. First it would be a test of the validity of the findings in this study. Second, it would provide a framework allowing further study of issues which were raised but not completely dealt with in this research. With a minimum of change in instruments and procedures, the replication could be conducted among officers in their nineteenth year of service. Following data analysis, follow-up comparisons of respondents' actual status could be commenced at the twenty-one year mark and could be continued for as long as meaningful results were being observed.

Additional research which could also be conducted within this framework is discussed in the following paragraphs.

1. The role of wife/family opinion in the retirement decision: In this study, the explanatory usefulness of the wife/family opinion variable was equal to the entire role-choice model. Greater understanding

is needed of why this variable proved so powerful and what the variable actually represents. If it is found to be a true representation of wife/family opinion, this suggests that as a practical matter the Navy should take a great interest in the opinions of wives and children and in the factors which affect these opinions. It could be, however, that this variable actually represents the respondent's own opinion rather than that of his family.

These questions could be examined in conjunction with the longitudinal study described above by interviewing samples of wives and children and matching their replies with those of the husband. This would also permit the researcher to study whether the factors which are important to the man are the same ones which affect the opinions of his wife and children.

2. The persistence of expectancy perceptions: Evidence presented by Lawler and Suttle (1973) suggests that the kinds of perceptions employed in expectancy theory models may be relatively short-lived. The kind of longitudinal design envisioned as a follow-up to this study should include periodic measurements among a randomly selected sub-sample of respondents to show whether valence, instrumentality and expectancy perceptions do change, how often, and whether this phenomenon is universal or selective. This would also be a valuable opportunity to assess when retirement decisions are made, precipitating factors which affect the decision, and whether the decision changes one or more times before overt action is taken.

3. Applicability of the role-choice model to different age groups: It has been suggested that the role-choice model used in this study would be equally applicable for predicting turnover in different settings and across different age groups. In view of the personnel retention problems of the military services, an appropriate study might be a longitudinal test of the ability of an appropriately modified role-choice model to predict the turnover decisions of junior officers and enlisted men completing their initial service obligations. This could be conducted in conjunction with the longitudinal study discussed earlier since most procedures would require only limited modification. Similar tests in civilian settings also seem warranted.

Theoretical Research Issues

A number of theoretical issues encountered in this study require further research attention in laboratory and/or field settings.

1. The usefulness of expectancy model components: Earlier in this chapter a possible explanation was outlined to suggest under what conditions V, I, and E perceptions are the strongest components of the model. A laboratory study would be particularly useful for this purpose. In this setting using a limited number of outcomes and exercising rigid control over the variables involved to avoid any variance not in keeping with the design, it is believed that considerable headway could be made toward solving this heretofore perplexing problem.

2. Situational effects on valence perceptions: It was found in this study that the valence of a particular outcome was usually,

but not always, assessed differently for the active duty and retired roles. This raises the question of whether (1) valences are always situation specific, (2) if some are situation specific and others unvarying, or (3) if they vary over time and across settings.

A relatively uncomplicated laboratory study might help to clarify the matter. Using a given set of outcomes, valence measures would first be taken in the abstract with no context mentioned. Subsequently, they could be assessed again for each of the alternative behaviors under consideration. For example in this study the twenty-five outcomes would have been assessed (1) in the abstract, (2) for the active role, and (3) for the retired role. A straightforward analysis could be employed. Valence measures for each outcome could be compared to see if they are different across behavioral choices. It would also be possible to apply the sets of outcomes in the model to determine if situationally anchored valences yielded more accurate predictions than those measured in the abstract. Finally, the valences could be re-measured at intervals to determine if changes also occur over time.

3. Outcome importance: Results of this study suggest that the importance of an outcome makes a contribution to an expectancy model independent of its valence. The design of the model made it desirable to use a few of the most important outcomes identified by each respondent to determine empirically what number yielded the highest level of accuracy. This approach would not be appropriate for a priori prediction, however, and research is needed to determine the most effective way to incorporate the importance of outcomes in the model. Two possibilities

seem plausible. One is to extend the basic tactic employed here and have respondents rank all outcomes from most to least important. Where few outcomes are used, methodological rigor could be gained by ranking all possible pairs of outcomes. Following importance ranking, the model could be calculated repeatedly, adding the next most important outcome after each calculation. Thus, it could be determined empirically whether a given number, or a small range of numbers, of most important outcomes result in optimum predictions. A different strategy which could be tested using the same data is to assign each outcome an importance weight based upon an importance rating given to it by the respondent. An expectancy formula taking the form of $E\left[\Sigma\left[\text{Importance}_i\ (V_i \times I_i)\right]\right]$ might be used.

The appropriateness of either approach is subject to empirical determination. A potential difficulty of the former technique could be that no one number of "most important" outcomes yields optimum predictions across situations or in one situation over time. Potential difficulties of the second approach are (1) the potential for respondent confusion among importance, valence, and instrumentality scales, and (2) unwillingness of participants to take the time needed to complete the number of scales required.

Importance rankings in this study were anchored to the retirement decision. In future research, however, it would seem appropriate to ascertain empirically if importance like valence does vary across situations. As in the case of the valence comparisons, a laboratory study seems appropriate for this purpose.

4. Intrinsic and negative valence: Two kinds of variables usually thought to be useful to expectancy models did not have the expected impact in this study. These are intrinsically valent and negatively valent outcomes. Considering the findings relating to the role of outcome importance, it seems likely that these were not strong predictors because they were not in general as important to respondents as other outcomes. In a future study such as the longitudinal replication advocated, it would be useful to include outcomes falling in each category and thought to be of both high and low importance. This would determine if, as expected, it is the criterion of importance rather than negative valence or intrinsic mediation which determines the usefulness of various outcomes in the model.

5. Non-expectancy predictors: It was reported earlier that three non-expectancy variables employed in this study (i.e., risk-taking propensity, hesitancy to retire, and wife/family opinion index) significantly increased the explanatory power of the model. The wife/family measure was as powerful as the entire role-choice model. Considering these findings it seems appropriate to ask what additional variables will enhance the model's capabilities. Further, it is important to discover whether non-expectancy variables identified will be relatively unchanging in their usefulness or unique to each research setting. For example, few situations exist in which the expectations of others are unimportant, while fear of the unknown seems applicable to studies involving turnover but not to those involving effort or performance.

Traditionally, most authors have assumed that individual differences are accounted for in expectancy theory models through the medium of subjects' expectancy, valence and instrumentality perceptions. For example Lawler (1971) hypothesizes that subjects' internal-external control beliefs and equity perceptions are accounted for in their perceptions of instrumentality and valence. The data from this study relating to risk-taking and that of Turney (1974) relating to irrationality propensity suggest that all of the individual differences are not accounted for by the expectancy model. Based upon these findings, one might argue, for example, that to predict acceptance or rejection of work as a steeplejack, a measure of acrophobia would be useful as an addition to expectancy components and the expectations of relevant others.

The findings relating to the usefulness of non-expectancy components in expectancy models lead to the following conclusions:

1. Expectancy theory models may, by themselves, have limited potential as a practical means of predicting work-related behavior. With the inclusion of additional psychological and situational components in the model, however, practically useful behavioral predictions may be attained. Before these additional variables can be used, though, researchers will be required to identify which variables are appropriate in a particular setting to avoid the almost inevitable tendency to include an excessive number and thereby obscure the meaning of results.

2. If added variables of this kind become integral components

of motivational models, a change in research designs will be required. Although expectancy theory research to date has consisted of post-hoc analysis, an underlying assumption has been that predictive models are the eventual goal. The extended role-choice model employed here was an attempt to validate the predictive utility of such a model. If, however, additional non-expectancy variables are required to achieve satisfactory levels of accuracy, a return to a regression-based test construction paradigm will be necessary to determine how expectancy and non-expectancy components should be combined. This will require a much more complex system of weighting and cross-validation than the rather straightforward within-person expectancy framework employed in this study.

For example, before a predictive model can be employed using additional non-expectancy variables, it will be necessary to (1) select the non-expectancy predictors, (2) determine beta weights for expectancy and non-expectancy predictors, (3) select (empirically or otherwise) prediction cutting scores, and (4) cross-validate the results. In view of the costs in time, money and effort inherent in this procedure, expectancy theory models may fail to achieve their full potential. Researchers instead may be tempted to continue to concentrate on the less effective but more tractable models that have come to be commonly accepted.

The final and most difficult question concerning the usefulness of non-expectancy components is why these variables have the ability to enhance predictions as they apparently do. An appealing explanation

is the one by Mitchell and Knudsen (1973) suggesting that expectancy models predict only preference and that situational moderators must be included to explain actual behavior. Although this accounts for the expectations of others, however, it is more difficult to explain why individual differences such as risk-taking propensity or irrationality would not affect preferences rather than mediating between preference and behavior. A good deal of research will be required to explain this phenomenon. Although the form that this research should take is not clear, it appears that it would be best carried out, at least initially, in laboratory studies where additional useful non-expectancy components can be identified and then tested exhaustively to determine why they are not accounted for in the model itself.

In summary, the major research tasks relating to non-expectancy variables are (1) to identify the kinds of variables which are appropriate, (2) to determine how they can best be incorporated into models, and (3) to understand why these variables are not accounted for by the basic expectancy formula. A good deal of the future practical utility of expectancy theory may hinge on the findings of this research.

6. Non-ratio scales: A final research issue which will be mentioned is the need to discover ways to overcome the problem of possible erroneous interpretations of expectancy theory results due to the use of non-ratio measurement scales (Schmidt, 1973). Although Schmidt described ways of converting to ratio scales,

these are likely to be infeasible or at best to result in a study constrained by the methodology. Consequently, studies are needed to determine first the extent to which people's assessments of variables do or do not yield ratio scales and if not, whether the departure tends to be constant or erratic. Second, study is needed to determine if other solutions exist which can be implemented without requiring much simpler research designs or greater computational difficulty as do the solutions suggested by Schmidt (1973).

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APPENDIX A

New York State School of Industrial and Labor Relations
A Statutory College of the State University
Cornell University Ithaca, New York 14850

December 20, 1973

Dear Sir:

Enclosed is the Naval Officer Career Decision Questionnaire I discussed in my recent letter to you. The instructions on its cover are, I believe, self-explanatory.

A great deal of time and effort have already been devoted to this project--by the research team, BUPERS people assisting me, and the many officers who have participated in lengthy interviews. It cannot, however, succeed without the cooperation of you and your fellow officers who have been selected to complete the questionnaire. Your participation in this final critical step will be greatly appreciated.

Thank you.

Sincerely,

Donald F. Parker

Donald F. Parker
CDR USN

P.S. If, after completing the questionnaire you wish to add other thoughts or insights, by all means include your comments with the questionnaire or drop me a note.

NAVAL OFFICER CAREER DECISION QUESTIONNAIRE

This is a study of the attitudes and opinions of naval officers who have recently completed twenty years of active duty.

My goal is to better understand the decisions made by naval officers concerning how long they will remain on active duty and what factors are important in this decision. To insure that I receive the widest possible range of responses, the questionnaire is being sent to both retired and active duty officers. The questions asked resulted from the opinions and ideas expressed by a number of naval officers I have interviewed in recent months.

Many months of preparation and a great deal of the time of officers interviewed has gone into this project already, but its final value will depend on the care and frankness with which you answer these questions. I therefore sincerely hope that you will devote your thoughtful consideration to it. There are no right or wrong answers. Only your opinions and feelings are of importance.

Individual responses will be kept secret. I have carefully avoided asking any questions which would identify you. Further, the data will be reported as group tabulations rather than as individual responses.

Thank you for your assistance in this project.

Sincerely,

Donald F. Parker

Donald F. Parker
CDR USN

INSTRUCTIONS

1. With one exception (Part C), the entire questionnaire is to be filled out by every participant. Part C, which is the last section of the questionnaire, is to be completed only by retired officers and those who have officially submitted a retirement request.

2. Most of the questions can be answered by one of the following means:

   a. checking one of the answers (✓) listed under the question.
   b. circling a number on a scale.
   c. writing a short answer in a blank.

   If you find a question with no answer applying to you, you may write your own answer.

3. Please use a pencil to complete the questionnaire so that you can erase in case you change your mind or discover you have made an error.

4. Try to answer all the questions. If you find one you simply cannot answer, however, skip it and go on rather than not completing the questionnaire.

5. Please disregard numbers in the margin of the questionnaire. These are to assist in coding your responses for computer analysis.

6. Feel free to use the space on the back of the questionnaire and needed additional sheets to make as many comments as you wish.

7. Enclosed you will find an envelope addressed to me at Cornell University. When you have completed the questionnaire, please mail it immediately!! It is most important that I begin the data analysis as soon as possible.

INTRODUCTION

Most naval officers approaching the completion of 20 years' service give some thought to whether they should continue on active duty or retire. Except for a few questions which will be clearly identified, this questionnaire will be concerned with what you thought at the time you reached this decision. For ease of reference, I will call this the "Career Decision Point." Those who did not consciously consider retirement or did not make a decision prior to the twenty year mark should consider their Career Decision Point to be completion of 20 years' active service.

Since you will be asked a number of questions about your Career Decision Point, it may help you to take a moment now to recall when you first decided whether or not you would retire and where you were stationed at that time (or if you made no decision, when and where you were when you completed twenty years of service). Then, jot this date and duty station on a slip of paper for ready reference to assist you as you complete the remainder of the questionnaire.

To reiterate, please answer all questions which do not give specific contrary instructions as you would have answered them on the day you decided whether or not to continue on active duty or the day you reached retirement eligibility, whichever came first.

PART A

I. ABOUT YOURSELF AND YOUR NAVY EXPERIENCE

1. What is your present Navy status?

_____Active Duty
_____Retired
_____Active Duty but have initiated retirement request
_____Other (please specify)_____

2. Are you eligible to request voluntary retirement?

_____Yes _____No _____Not applicable, I am retired

3. What is your present rank for pay purposes (if retired, rank at retirement).

_____LCDR _____ CAPT
_____CDR _____ Other (specify) _____

4. What was your rank when you reached your Career Decision Point?

_____LCDR _____CAPT
_____CDR _____Other (specify)_____

5. What is your Designator?

_____1100	_____1320	_____1610	_____2100	_____5100
_____1110	_____1350	_____1640	_____2200	_____Other (specify)
_____1120	_____1400	_____1650	_____2500	_____
_____1130	_____1510	_____1700	_____3100	
_____1310	_____1520	_____1810	_____4100	

6. If you have (or had before your retirement) special skills or capabilities not reflected by your designator or college degrees, please list them below. (Examples: submariner; astronaut; deep sea salvage specialist; R & D Project Manager, medical specialty, etc.) _____

7. What was the source of your commission?

_____USNA _____NAVCAD _____DIRECT
_____OCS _____NROTC _____Other (specify) _____

8. Excluding the period spent as a student in NROTC or at the Naval Academy, (i.e., service which did not count toward retirement) how many years active naval service have you completed (to the nearest year)? Retirees please indicate years at retirement.

_____years active commissioned service.
_____years active enlisted service. (Including enlisted service as O/C, NAVCAD, etc.)

9. Did you have at least a Baccalaureate degree before you were commissioned?

_____Yes _____No

10. Please indicate any of the following degrees you held <u>at your Career Decision Point</u>. (You may check more than one.)

_____B.A. or B.S. _____Specify field of study
_____M.A. or M.S. _____Specify field of study
_____Ph.D. _____Specify field of study
_____M.D.
_____L.L.B.
_____D.D.S.
_____None of the above
_____Other (Specify) _____

11. Which of the following best described your status <u>at your Career Decision Point</u>.

_____Married _____Divorced _____Widowed
_____Never married _____Separated

12. What was your age when you completed twenty years of active service? _____
What is your present age? _____

13. <u>When you completed twenty years of service and became eligible for retirement</u>, what was the age of the youngest child for whom you were financially responsible?

_____I had no children _____13 to 17
_____under 7 _____18 to 22
_____7 to 12 _____over 22

14. How many children did you have? _____

15. Which of the following statements most accurately describes your own career decision?

_____I have never really considered retiring.
_____I decided several years in advance to stay on active duty as long as possible and have not changed my opinion.
_____I started considering retirement as I approached the twenty year mark and decided to stay on active duty.
_____I started considering retirement as I approached the twenty year mark but have not yet made a decision of when I will request retirement.
_____I have considered retirement and would like to be retired but have not yet requested retirement.
_____I started considering retirement as I approached the twenty year mark and decided to request retirement.
_____I decided several years in advance to retire at or shortly after my first eligibility.
_____Other, please specify._____

16. If I had asked you at your Career Decision Point, how would you have rated the probability of your being granted permission to retire at your 20 year mark (plus any additional active duty obligation you had previously incurred) provided you submitted the required official request to the Secretary of the Navy? Please circle the <u>one</u> most appropriate number.

(No chance of approval) 0 1 2 3 4 5 6 7 8 9 10 (Approval certain)

17. Most officers have a general preference for what they will do following retirement from the Navy. Some will teach; others plan to work in industry, etc. Again referring to your Career Decision Point, how would hou have evaluated the probability of your successfully attaining the occupation or activity <u>you</u> would have most preferred for a post-retirement career. (Please circle the <u>one</u> number which best reflects what your answer would have been.)

(No chance of attaining this occupation or activity) 0 1 2 3 4 5 6 7 8 9 10 (Attainment certain)

18. At this same Career Decision Point, how would you have estimated the probability of your being allowed to remain on active duty for the period then established for your rank (i.e., 26 years for Commander, 30 years for Captain, etc.) Please circle the <u>one</u> number which most accurately reflects what your answer would have been.

(No chance of remaining on active duty) 0 1 2 3 4 5 6 7 8 9 10 (Continued active duty certain)

19. At your Career Decision Point, how would you have rated the stability and dependability of Navy personnel practices and policies with those you would have expected to find in your probable post-retirement job or activity.

(Navy much less stable and dependable) -4 -3 -2 -1 0 (Both about the same) 1 2 3 4 (Navy much more stable and dependable)

20. Which of the following most nearly describes your present status?

_____Not retired, I am not considering retirement or do not plan to retire before I am required to.
_____Not retired, but I am considering retirement.
_____Not retired, but I would like to retire.
_____Not retired, but I have decided I will retire more than one year earlier than I am required to by law.
_____I could have remained on active duty but I voluntarily retired (or have requested retirement) because I expected to be forced to retire soon.
_____I could have remained on active duty, but I voluntarily retired (or have requested retirement) because I wanted to.
_____I was involuntarily retired due to failure of selection for promotion.
_____I was involuntarily retired due to physical disability.
_____Other (specify)_____

21. At the time you reached your Career Decision Point, what was the total number of people, including yourself, your wife, children, and others whom you expected to be totally dependent upon you for support at the time you completed twenty years active Navy service?

_____Number of people.

22. To what extent have you been satisfied with the overall treatment and consideration you have received from the Navy during your years on active duty?

_____Could not have been better
_____Extremely satisfied
_____Highly satisfied
_____Satisfied
_____Neither satisfied nor dissatisfied
_____Dissatisfied
_____Highly dissatisfied
_____Extremely dissatisfied
_____Could not have been worse

23. Please circle the one number indicating the opinion you would have given of your chances for future navy promotion had you been asked at your Career Decision Point.

(No chance) 0 1 2 3 4 5 6 7 8 9 10 (Certain)

24. Had you ever failed to be selected for a promotion (i.e., been "passed over") before reaching your Career Decision Point?

_____yes _____no

25. When you reached your Career Decision Point, how many times had you failed to be selected for promotion to the next higher rank than you held at that time?

_____none
_____one
_____two
_____more than two

THIS COMPLETES SECTION I.

II. ABOUT YOUR PREPAREDNESS FOR RETIREMENT

1. Did you actively seek a job or business opportunity before reaching your Career Decision Point?

_____yes _____no

2. If you actively sought a job or business opportunity before your Career Decision Point, which of the following best describes your experience?

_____I found a job or position better than I had hoped for.
_____I found a job or position which satisfied me.
_____I found a job or position which was not as good as I had hoped for.
_____I did not find a job or position.
_____I did not look for a job or position.
_____Other (please specify) _____

3. As you approached the Career Decision Point, indicate any action you took to assess your chances of finding a suitable civilian job or to actually look for a job or business opportunity (you may check more than one blank).

_____Contacted prospective employers or employment agencies.
_____Actively looked into specific independently owned business opportunities.
_____Contacted Project Transition or other employment counselor.
_____Mailed resumes.
_____Other (please specify)_____
_____Took no actions to assess capabilities or look for a job.

4. At your Career Decision Point, indicate which of the following best reflected your anticipated annual income (excluding Navy Retirement pay) after two years of retirement.

_____Less than $5,000
_____$5,000 - $10,000
_____$10,000 - $15,000
_____$15,000 - $30,000
_____$30,000 - $50,000
_____$50,000 - $100,000
_____more than $100,000

5. Had you retired at your first opportunity, how much income would you have required from a post-retirement job after two years of retirement, not counting your Navy Retirement pay?

_____Less than $5,000
_____$5,000 - $10,000
_____$10,000 - $15,000
_____$15,000 - $30,000
_____$30,000 - $50,000
_____$50,000 - $100,000
_____more than $100,000

6. What was the approximate value of your total worth when you became retirement eligible, including savings, investments, equity in real estate (already paid for) and the like. (Do not include life insurance policies).

_____0 - $5,000
_____$5,000 - $10,000
_____$10,000 - $25,000
_____$25,000 - $50,000
_____$50,000 - $75,000
_____$75,000 - $100,000
_____$100,000 - $500,000
_____more than $500,000
_____more than $500,000

7. When you first became retirement eligible, what was your total indebtedness excluding the amount owed on the home you were living in?

_____none
_____less than $2,500
_____$2,500 - $5,000
_____$5,000 - $10,000
_____$10,000 - $25,000
_____$25,000 - $50,000
_____$50,000 - $100,000
_____ more than $100,000

8. At your Career Decision Point which of the following best reflected the amount of inheritance you and your wife expected to receive prior to your reaching age 65?

_____none
_____0 - $10,000
_____$10,000 - $25,000
_____$25,000 - $50,000
_____$50,000 - $100,000
_____$100,000 - $250,000
_____$250,000 - $500,000
_____more than $500,000

9. Considering your skills, training, education and experience, circle the one number reflecting what your assessment would have been at your Career Decision Point, of your probable success in immediately (or within the first year) doing as well or better financially in a civilian job or profession as you were doing in the Navy?

(No chance of doing as well or better) 0 1 2 3 4 5 6 7 8 9 10 (Certain to do as well or better)

(Fairly good chance)

10. Although some officers might like to make a change, they find it quite difficult to make a break with what they have been doing for a long period. Leaving aside all the other considerations which might weigh on your decision, check the answer which best reflects the "inertia" or "hesitancy to make the break" or "fear of the unknown" that affected your retirement or non-retirement decision when you reached your Career Decision Point.

_____I felt absolutely no hesitancy.
_____I felt almost no hesitancy.
_____I felt slight hesitancy.
_____I felt moderate hesitancy.
_____I was quite hesitant.
_____I was extremely hesitant.
_____I was so hesitant that it overcame all other considerations which might otherwise have lead to my retirement.

11. As you approached the Career Decision Point, which of the following evaluations would you have made of the status, prestige, and esteem enjoyed by people in the kind of work you would most likely do after retirement in comparison to the prestige of a naval officer of your rank?

_____A great deal less than the prestige of a naval officer.
_____Less than the prestige of a naval officer.
_____About the same.
_____Greater than the prestige of a naval officer.
_____A great deal more than the prestige of a naval officer.
_____Don't know.

12. Some people think of themselves primarily in terms of their educational or professional specialty ("I'm an engineer," "a dentist," "an aviator," etc.) while others automatically respond in terms of the naval profession ("I am a Naval Officer"). Which of these was more true of you at your Career Decision Point?

_____I would have identified myself by my educational or professional specialty.
_____I would have identified myself as a naval officer.

13. At what point in your navy career did you begin to make specific plans about what you would do after retirement?

_____Within the first five years
_____5th to 15th year
_____15th to 18th year
_____18th to 19th year
_____19th to 20th year
_____20th to 21st year
_____after 21st year and before the present
_____have made no specific plans

14. If your son were deciding on a career, would you advise him to seek a career as a naval officer?

_____Definitely would
_____Probably would
_____Would not advise for or against
_____Probably advise against
_____Definitely advise against
_____Don't know

15. If you have decided to retire at a particular point in your career but have not yet reached that point, please specify what that point is in terms of years of total active service (e.g., 26 years).

_____years.
_____Not applicable; I am retired or have requested retirement.

16. Please circle the number indicating your opinion of your chances of future promotion in the Navy.

(No chance) 0 1 2 3 4 5 6 7 8 9 10 (Certain)

_____Not applicable; I am retired or have requested retirement.

17. On the scale below circle the number which best reflects your wife's opinion at <u>your Career Decision Point</u>. If you don't know, circle zero.

(Strongly favored retirement) 4 3 2 1 0 1 2 3 4 (Strongly favored continued active duty)
(no opinion or don't know)

_____Not married

18. Now please indicate the dominant opinion as to your retirement/non-retirement held by your immediate family, not including your wife. (If you don't know, circle zero)

(Strongly favored retirement) 4 3 2 1 0 1 2 3 4 (Strongly favored continued active duty)

19. How important was your wife's opinion on your decision to retire or not retire?

(Very unimportant) 4 3 2 1 0 1 2 3 4 (very important)

_____Not married

20. How important were the opinions of your immediate family, not including your wife?

(Very unimportant) 4 3 2 1 0 1 2 3 4 (very important)

THIS COMPLETES SECTION II

PART B

JUDGEMENTS ABOUT YOUR FUTURE

The future obviously holds many "unknowns" for all of us. Yet every day we make educated guesses of the "if I do 'X', what is the likelihood of 'Y'" variety. We also make estimates of the desirability or undesirability of both the "X" and "Y". Together, these educated guesses and desirability estimates play a part in our selections among the alternatives we face in the normal course of our lives.

In the following pages you will find 25 statements of things which might be experienced by a person in connection with his job or profession. I will refer to these as "Job-related Outcomes." You will be asked to consider carefully each of them and rate their desirability for you and their likelihood of occurrence for you if (a) you were a retired officer in your expected retirement job or activity and (b) if you remained an active duty naval officer.

As before, you are asked to respond as you would have had you completed this questionnaire <u>at your Career Decision Point</u>. Your ratings should <u>not</u> reflect what has actually happened since your Career Decision Point, but only how you would have responded then. Remember, there are no "right" or "wrong" answers. I am interested only in the personal opinions you would have expressed then.

I. DESIRABILITY RATINGS --- RETIREES PERSPECTIVE

Most officers have a general idea of what they will do following retirement from the Navy. Some will teach, others plan to work in industry, some will completely retire, etc. I would now like you to evaluate the desirability or undesirability of the Job-Related Outcomes for you <u>at the Career Decision Point</u>, thinking of your future life as a retired naval officer in your expected retirement role.

By desirable I mean how much you would have liked to experience each "outcome" and by undesirable I mean how much you would have disliked having each of them.

The following scale will be used. Please circle the most appropriate number on the scale below each statement.

maximum undesirability	extremely undesirable	very undesirable	undesirable	does not matter	desirable	very desirable	extremely desirable	maximum desirability
-4	-3	-2	-1	0	1	2	3	4

EXAMPLE: "Belonging to an exclusive country club."

(Maximum undesirability) -4 -3 -2 -1 0 1 (2) 3 4 (Maximum desirability)

Think to yourself: "<u>At my Career Decision Point</u>, how desirable would I have rated 'Belonging to an exclusive country club' for me as a retired naval officer, working in my expected civilian job or profession?" If, for example, belonging to an exclusive country club would have been "very desirable," your answer would appear as is shown on the scale above.

JOB-RELATED OUTCOMES

PLEASE CIRCLE THE ONE NUMBER WHICH BEST REFLECTED YOUR OPINION

1. Working in an organization where personnel policies and practices directly affecting me and my future are arbitrarily changed without consultation or agreement with me.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

2. Future promotions

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

3. A feeling of camaraderie among the members of the organization.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

4. Having my wife and/or children satisfied with the nature of my job and its demands.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

5. Working for an organization that recognizes my contributions.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

6. Frequent separation from my family of more than a few days duration because of the demands of my job.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

7. Having future job assignments I prefer.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

8. Having a job or profession that provides adventure, zest, or excitement.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

9. Making enough money to provide for future needs and security.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

10. Relatively frequent transfers to a new location and job.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

11. Having a job I don't like.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

12. A feeling of pride and self-esteem in the way I earn my living.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

13. Being involuntarily retired before I want to retire.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

14. Considerably more authority and responsibility.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

REMINDER:

Perspective of this section ---
TIME: Your Career Decision Point
FRAME OF REFERENCE: Retired Officer in civilian activity
Don't be influenced by what has happened since!

15. A feeling that my job and what I do are important.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

16. Having a job where there will be challenge and opportunity for personal growth.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

17. Earning twice as much money.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

18. Being under a great deal of pressure in my job.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

19. Being in charge of an organization.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

20. Living in a place I am happy to live in.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

21. A job which gives a feeling of worthwhile accomplishment.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

22. Working in an organization where there are arbitrary and/or inequitable rules, regulations or policies which I or my immediate superiors in the organization are powerless to correct.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

23. Feeling of self-fulfillment.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

24. Opportunity for independent thought and action.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

25. A great feeling of satisfaction from my work.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

THIS COMPLETES PART B, SECTION I

II. LIKELIHOOD OF OCCURRENCE IF I RETIRE

Consider, again, the 25 Job-Related Outcomes which follow. From the perspective of how you felt at your Career Decision Point, ask yourself the following question about each of them, "Assuming that I were retired from the Navy and performing the job or activity I expect to pursue following retirement, how likely (between 'impossible' and 'certain') is it that I would experience this particular outcome?" If you had never considered retirement, evaluate the outcomes as to their likelihood for the activity you would have expected to pursue when you did retire.

The following scale will be used. Please circle the number which best reflects what your opinion would have been at your Career Decision Point.

impossible	extremely unlikely	very unlikely	unlikely	neither likely nor unlikely	likely	very likely	extremely likely	certain
-4	-3	-2	-1	0	1	2	3	4

EXAMPLE: "Earning $100,000 per year."

(impossible) -4 -3 -2 -1 0 (1) 2 3 4 (certain)

Think to yourself: "At my Career Decision Point how would I have rated the likelihood of my earning $100,000 per year if I retired from the Navy and took up my anticipated retirement job or activity?

If you would have considered the likelihood of your earning $100,000 per year in retirement as being "likely," your answer would appear as is shown on the scale above.

JOB-RELATED OUTCOMES

PLEASE CIRCLE THE ONE NUMBER WHICH BEST REFLECTED YOUR OPINION.

1. Working in an organization where personnel policies and practices directly affecting me and my future are arbitrarily changed without consultation or agreement with me.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

2. Future promotions

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

3. A feeling of camaraderie among the members of the organization.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

4. Having my wife and/or children satisfied with the nature of my job and its demands.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

5. Working for an organization that recognizes my contributions.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

6. Frequent separation from my family of more than a few days duration because of the demands of my job.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

7. Having future job assignments I prefer.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

8. Having a job or profession that provides adventure, zest, or excitement.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

9. Making enough money to provide for future needs and security.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

10. Relatively frequent transfers to a new location and job.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

11. Having a job I don't like.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

12. A feeling of pride and self-esteem in the way I earn my living.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

13. Being involuntarily retired before I want to retire.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

14. Considerably more authority and responsibility.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

15. A feeling that my job and what I do are important.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

16. Having a job where there will be challenge and opportunity for personal growth.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

17. Earning twice as much money.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

REMINDER:

Perspective of this section ---
TIME: Your Career Decision Point
FRAME OF REFERENCE: Retired Officer in civilian activity
Don't be influenced by what has happened since!

18. Being under a great deal of pressure in my job.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

19. Being in charge of an organization.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

20. Living in a place I am happy to live in.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

21. A job which gives a feeling of worthwhile accomplishment.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

22. Working in an organization where there are arbitrary and/or inequitable rules, regulations or policies which I or my immediate superiors in the organization are powerless to correct.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

23. Feeling of self-fulfillment.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

24. Opportunity for independent thought and action.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

25. A great feeling of satisfaction from my work.

(impossible) -4 -3 -2 -1 0 1 2 3 4 (certain)

THIS COMPLETES PART B, SECTION II.

RATINGS FROM THE PERSPECTIVE OF ACTIVE DUTY NAVAL OFFICER

Sections III and IV which follow are designed to elicit your opinions of the desirability and likelihood of occurrence of the same 25 outcomes, but this time you are being asked to make these judgments from your perspective at the Career Decision Point, evaluating their desirability and likelihood of occurrence if you remain on active duty.

Your ratings should not be influenced by whether you had these things or not or by anything which has happened to you since your Career Decision Point. Also you should not be influenced by your ratings in the two sections just completed.

III. DESIRABILITY RATINGS FROM ACTIVE DUTY PERSPECTIVE

The following scale gives the meanings of the numbers you will use to make your ratings. As soon as you have reviewed the scale and the example which follows, please begin: read each statement and then on the scale below it, circle the number which reflects your assessment of that 'outcome' for you at your Career Decision Point, considering its desirability for you as an active duty naval officer.

Maximum undesirability	extremely undesirable	very undesirable	undesirable	does not matter	desirable	very desirable	extremely desirable	maximum desirability
-4	-3	-2	-1	0	1	2	3	4

EXAMPLE: "Belonging to an exclusive country club."

(Maximum undesirability) -4 (-3) -2 -1 0 1 2 3 4 (Maximum desirability)

Think to yourself: "At my Career Decision Point, how desirable would I have rated 'Belonging to an exclusive country club' for me as a naval officer expecting to continue on active duty?"

Assuming that your answer would have been "extremely undesirable," your answer would appear as it does on the scale above.

JOB-RELATED OUTCOMES

PLEASE CIRCLE THE ONE NUMBER WHICH BEST REFLECTED YOUR OPINION.

1. Working in an organization where personnel policies and practices directly affecting me and my future are arbitrarily changed without consultation or agreement with me.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

2. Future promotions

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

3. A feeling of camaraderie among the members of the organization.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

4. Having my wife and/or children satisfied with the nature of my job and its demands.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

5. Working for an organization that recognizes my contributions.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

6. Frequent separation from my family of more than a few days duration because of the demands of my job.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

7. Having future job assignments I prefer.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

8. Having a job or profession that provides adventure, zest, or excitement.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

9. Making enough money to provide for future needs and security.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

10. Relatively frequent transfers to a new location and job.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

11. Having a job I don't like.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

12. A feeling of pride and self-esteem in the way I earn my living.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

13. Being involuntarily retired before I want to retire.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

REMINDER:

Perspective of this section ---
TIME: Your Career Decision Point
FRAME OF REFERENCE: Active Duty Officer
Don't be influenced by what has happened since!

14. Considerably more authority and responsibility.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

15. A feeling that my job and what I do are important.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

16. Having a job where there will be challenge and opportunity for personal growth.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

17. Earning twice as much money.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

18. Being under a great deal of pressure in my job.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

19. Being in charge of an organization.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

20. Living in a place I am happy to live in.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

21. A job which gives a feeling of worthwhile accomplishment.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

22. Working in an organization where there are arbitrary and/or inequitable rules, regulations or policies which I or my immediate superiors in the organization are powerless to correct.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

23. Feeling of self-fulfillment.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

24. Opportunity for independent thought and action.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

25. A great feeling of satisfaction from my work.

(Maximum undesirability) -4 -3 -2 -1 0 1 2 3 4 (Maximum desirability)

THIS COMPLETES PART B, SECTION III

IV. LIKELIHOOD OF OCCURRENCE IF I REMAIN ON ACTIVE DUTY

Again consider each of the 25 Job-Related Outcomes. From the perspective of how you felt at your Career Decision Point, ask yourself the following question about each of them. "Assuming that I remain on active duty as a naval officer, what is the likelihood (from impossible to certain) that this condition will exist for me?"

Again, make a special effort to avoid being influenced by whether these outcomes have or have not occurred, and do not let your opinion be affected by whether you have remained in the Navy or retired. Also please try to avoid being influenced by your earlier ratings. Only your best judgment of how you would have answered the question at your Career Decision Point is needed.

The following scale will be used. Please circle the number which best reflects what your opinion would have been at your Career Decision Point.

impossible	extremely unlikely	very unlikely	unlikely	neither likely nor unlikely	likely	very likely	extremely likely	certain
-4	-3	-2	-1	0	1	2	3	4

EXAMPLE: "Earning $100,000 per year."

(Impossible) (-4) -3 -2 -1 0 1 2 3 4 (Certain)

Think to yourself: "At my Career Decision Point how would I have evaluated the likelihood of my earning $100,000 per year while I remained on active duty in the Navy?"

If your answer would have been "impossible," your answer should appear as it does in this example.

JOB-RELATED OUTCOMES

PLEASE CIRCLE THE ONE NUMBER WHICH BEST REFLECTED YOUR OPINION.

1. Working in an organization where personnel policies and practices directly affecting me and my future are arbitrarily changed without consultation or agreement with me.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

2. Future promotions.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

3. A feeling of camaraderie among the members of the organization.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

4. Having my wife and/or children satisfied with the nature of my job and its demands.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

5. Working for an organization that recognizes my contributions.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

6. Frequent separation from my family of more than a few days duration because of the demands of my job.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

7. Having future job assignments I prefer.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

8. Having a job or profession that provides adventure, zest, or excitement.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

9. Making enough money to provide for future needs and security.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

10. Relatively frequent transfers to a new location and job.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

11. Having a job I don't like.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

12. A feeling of pride and self-esteem in the way I earn my living.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

13. Being involuntarily retired before I want to retire.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

14. Considerably more authority and responsibility.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

15. A feeling that my job and what I do are important.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

REMINDER:

Perspective of this section --- TIME: Your Career Decision Point FRAME OF REFERENCE: Active Duty Officer Don't be influenced by what has happened since!

16. Having a job where there will be challenge and opportunity for personal growth.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

17. Earning twice as much money.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

18. Being under a great deal of pressure in my job.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

19. Being in charge of an organization.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

20. Living in a place I am happy to live in.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

21. A job which gives a feeling of worthwhile accomplishment.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

22. Working in an organization where there are arbitrary and/or inequitable rules, regulations or policies which I or my immediate superiors in the organization are powerless to correct.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

23. Feeling of self-fulfillment.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

24. Opportunity for independent thought and action.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

25. A great feeling of satisfaction from my work.

(Impossible) -4 -3 -2 -1 0 1 2 3 4 (Certain)

THIS COMPLETES PART B, SECTION IV.

V. IMPORTANCE OF OUTCOMES

Since you have now considered the preceding 25 Job-Related Outcomes from four different perspectives, they should be familiar to you. Please go through the list (below) and decide which eight of these outcomes would have been most important to you at your Career Decision Point for choosing to retire or not retire from the Navy. List the numbers of these outcomes in the eight blanks below starting with the most important and progressing to the 8th most important.

(most important) 1._____ 5. _____

2._____ 6. _____

3._____ 7. _____

4._____ 8. _____

1. Working in an organization where personnel policies and practices directly affecting me and my future are arbitrarily changed without consultation or agreement with me.
2. Future promotions.
3. A feeling of camaraderie among the members of the organization.
4. Having my wife and/or children satisfied with the nature of my job and its demands.
5. Working for an organization that recognizes my contributions.
6. Frequent separation from my family of more than a few days duration because of the demands of my job.
7. Having future job assignments I prefer.
8. Having a job or profession that provides adventure, zest, or excitement.
9. Making enough money to provide for future needs and security.
10. Relatively frequent transfers to a new location and job.
11. Having a job I don't like.
12. A feeling of pride and self-esteem in the way I earn my living.
13. Being involuntarily retired before I want to retire.
14. Considerably more authority and responsibility.
15. A feeling that my job and what I do are important.
16. Having a job where there will be challenge and opportunity for personal growth.
17. Earning twice as much money.
18. Being under a great deal of pressure in my job.
19. Being in charge of an organization.
20. Living in a place I am happy to live in.
21. A job which gives a feeling of worthwhile accomplishment.
22. Working in an organization where there are arbitrary and/or inequitable rules, regulations or policies which I or my immediate superiors in the organization are powerless to correct.
23. Feeling of self-fulfillment.
24. Opportunity for independent thought and action.
25. A great feeling of satisfaction from my work.

VI. JOB DESCRIPTION

This section seeks a description of the particular job you held when you reached your Career Decision Point. If you held more than one job during the period you were considering your decision, please answer in terms of the one held when you actually made the decision (or passed the 20 year mark if you made no decision).

Beside each of the following items, place a:

Y - For Yes if the item describes the job you held.
N - For No, if it does not describe the job you held.
? - If you cannot decide or don't know.

PLEASE RESPOND TO ALL ITEMS.

WORK	SUPERVISION	CO-WORKERS
_____Fascinating	_____Asks my Advice	_____Stimulating
_____Routine	_____Hard to please	_____Boring
_____Satisfying	_____Impolite	_____Slow
_____Boring	_____Praises good work	_____Ambitious
_____Good	_____Tactful	_____Stupid
_____Creative	_____Influential	_____Responsible
_____Respected	_____Up-to-date	_____Fast
_____Hot	_____Doesn't Supervise Enough	_____Intelligent
_____Pleasant	_____Quick Tempered	_____Easy to make enemies
_____Useful	_____Tells me where I stand	_____Talk too much
_____Tiresome	_____Annoying	_____Smart
_____Healthful	_____Stubborn	_____Lazy
_____Challenging	_____Knows job well	_____Unpleasant
_____On your feet	_____Bad	_____No privacy
_____Frustrating	_____Intelligent	_____Active
_____Simple	_____Leaves me on my own	_____Narrow interests
_____Endless	_____Lazy	_____Loyal
_____Gives sense of accomplishment	_____Around when needed	_____Hard to meet

PAY	PROMOTIONS
_____Income adequate for normal expenses	_____Good opportunity for advancement
_____Barely live on income	_____Opportunity somewhat limited
_____Bad	_____Promotion on ability
_____Income provides luxuries	_____Dead-end job
_____Insecure	_____Good chance for promotion
_____Less than I deserve	_____Unfair promotion policy
_____Highly paid	_____Infrequent promotions
_____Underpaid	_____Regular promotions
	_____Fairly good chance for promotion

SECTION VII.

Place a check mark (✓) by the statement in each of the following eight pairs which best describes your own feelings.

The kind of job that I would most prefer would be:

1. (a) _____An exciting job but one which might be done away with in a short time.
   (b) _____A less exciting job but one which would undoubtedly exist in the company for a long time.

2. (a) _____A job where I am almost always on my own.
   (b) _____A job where there is nearly always someone available to help me on problems that I don't know how to handle.

3. (a) _____A job where I am almost certain always of my ability to perform well.
   (b) _____A job where I am usually pressed to the limit of my abilities.

4. (a) _____A job where there is nearly always a person or a procedure that will catch my mistakes.
   (b) _____A job where I am the final authority on my work.

5. (a) _____A job where I could never be too successful but neither could I be a complete failure.
   (b) _____A job where I could be either highly successful or a complete failure.

6. (a) _____A job where I have to make many decisions by myself.
   (b) _____A job where I have to make a few decisions by myself.

7. (a) _____A job where my instructions are quite detailed and specific.
   (b) _____A job where my instructions are very general.

8. (a) _____A job that is changing very little.
   (b) _____A job that is constantly changing.

This completes PART B. Retired officers and those who have requested retirement continue to PART C. Active duty officers should check the "active duty" blank below and review the preceding sections to insure that you have not inadvertently skipped any questions. Your cooperation is sincerely appreciated. In the event you may have lost the self-addressed envelope provided, the address to which the questionnaire should be mailed will be found on the last page.

PART C

RETIRED OFFICER INFORMATION

These questions are to be completed only by officers who <u>are already retired or those who have officially submitted a retirement request</u>. Other active duty officers should check the active duty blank below.

_____Active Duty

1. When did (or will) you retire? (Month and year in 4 digits. For example: August 1972 should be written 08/72.)

_____Retirement month/year

2. At the time you decided to retire, would you have changed your mind if you could have changed immediately to another job within the Navy?

_____Yes, I would have remained on active duty.
_____No, I would have retired anyway.
_____undecided.

3. If you retired voluntarily (or have requested voluntary retirement), how close was your retirement (will it be) to your earliest eligibility to retire?

_____Not applicable; I was involuntarily retired
_____Within 3 months of eligibility
_____3 months to one year after eligibility
_____1-2 years after eligibility
_____more than 2 years after eligibility

4. If voluntarily retired (or if you have applied for voluntary retirement), why did you decide to apply? Place the number 1 next to the most important factor, 2 next to the second most important, etc. until you have indicated all factors which affected your decision.

_____Not applicable (involuntarily retired)
_____I was dissatisfied with my job or working conditions.
_____I saw little or no opportunity for further promotion.
_____Uncertainty concerning retention and/or future benefits.
_____I (or my wife/family) wished to avoid family separation.
_____My illness or declining health.
_____My family had a personal problem (e.g., health, education, etc.) that I could not handle and remain in the Navy.
_____There is a specific job in civilian life I wished to take.
_____I had a strong desire for a second career.
_____Since I could not remain in the Navy to age 65, I thought it was better to make the transition to a civilian career earlier rather than later.
_____I believed I could find a more satisfying civilian position.
_____I desired to permanently locate - to put down "roots."
_____I desired a job with normal working hours and requirements.

5. What has your primary activity been since retirement?

_____Fully retired
_____Employed in a full time job
_____Part-time employment
_____Seeking employment
_____Attending college or other educational or training institution

6. Are you employed full-time or do you expect to be in the near future.

_____yes _____no

7. Which of the following most correctly reflects your current annual gross income not including your Navy retirement pay or your wife's income?

_____none
_____less than $5,000
_____$5,000 to $10,000
_____$10,000 to $20,000
_____$20,000 to $40,000
_____$40,000 to $75,000
_____more than $75,000

8. If your wife is employed, what are her annual gross earnings?

_____not married	_____$5,000 to $10,000
_____wife not employed	_____$10,000 to $20,000
_____less than $5,000	_____more than $20,000

THIS COMPLETES THE QUESTIONNAIRE. PLEASE REVIEW IT TO INSURE THAT NO QUESTIONS HAVE BEEN SKIPPED. YOUR COOPERATION IS SINCERELY APPRECIATED.

Please return the questionnaire in the self-addressed envelope provided. Should you have misplaced this envelope, my address is:

CDR Donald F. Parker
c/o Professor Lee D. Dyer
Box 73
New York State School of Industrial and Labor Relations
Cornell University
Ithaca, New York 14850

THE SPACE BELOW MAY BE USED FOR ANY COMMENTS YOU DESIRE TO MAKE.

APPENDIX B

New York State School of Industrial and Labor Relations
A Statutory College of the State University
Cornell University Ithaca, New York 14850

December 14, 1973

Dear Sir:

In about a week, I will be asking a favor of you. Since it is most important that you be willing to assist, perhaps it would be helpful to tell you what I am doing and why.

I am a naval officer in the final stage of a Navy-sponsored doctorate at Cornell University. By this time next year I should be back on sea duty. The last phase of my work here is a research project aimed at identifying important factors which influence some officers to retire early while others do not. As you know, all facets of the retirement system have received considerable attention recently, and both BUPERS and the Office of Naval Research have shown interest in the potential results of my study. They are providing technical assistance and financial support although I remain independently responsible for its actual conduct, data analysis, and conclusions.

The best way to study this subject is to find out what is important to a diverse group of randomly selected officers, including those who have recently retired. To be sure of asking relevant questions in the Naval Officer Career Decision Questionnaire which you will be asked to complete, I visited officers in several locations to determine what issues they consider important. Their help was invaluable, and we are now ready to consult the larger group of which you are a part. The success of a research project using a mailed questionnaire is, of course, completely dependent upon willing participants. Since naval officers have historically been highly responsive to requests for assistance on research projects, however, and also because the potential results of the study will be greatest with the larger number of responses that a questionnaire can provide, I have decided that this approach is warranted. Because there has been very little research into the subject of retirement, I hope that with your help this project can be a source of information which will benefit the Navy, and present and future officers.

I wish I could say that the questionnaire will take only a few minutes, but that isn't true. On the basis of my pre-tests, I find that if completed conscientiously, it will take about an hour. I plan to mail the questionnaire to reach you immediately after Christmas when I have usually found a lull in the workload. Perhaps this will make it easier for you to find the time required. I think my questions will seem relevant and be interesting. As I said earlier, the majority were suggested by comments of other naval officers.

Your willingness to cooperate is the final step essential to the success of this project. Therefore, I sincerely hope you will set aside enough time to complete and return the questionnaire as soon as you receive it. Thanks in advance for your cooperation.

Sincerely,

Donald F. Parker

Donald F. Parker
CDR USN

APPENDIX C

New York State School of Industrial and Labor Relations
A Statutory College of the State University
Cornell University Ithaca, New York 14850

January 18, 1974

Dear Sir:

In late December, I sent you a copy of the Naval Officer Career Decision Questionnaire. If you are among those who have already returned it, I would like to express my sincere appreciation. The speed with which many of you did so was nothing short of astonishing. I am also most impressed with the care and attention you have given to following exactly the complex instructions. If the present trend continues, the number of unusable replies will be all but negligible.

For you who haven't completed the questionnaire I'm sure there are sound reasons. Perhaps the questionnaire was delayed by holiday mail, got pushed to the bottom of your pending file, or was neglected in your hectic pre-holiday leave or vacation preparations. Fortunately, enough time is still available to permit you to participate in the study, and although a large number of your fellow officers have already responded, I hope I can convince you of the need to find out what you think as well. For instance, the fact that you are deployed or have an extremely demanding job which has thus far kept you from answering may be the very factor which permits you to add insights which others did not provide. The same is true if you are a person who doesn't like questionnaires.

Whatever the reason for your not having responded, we can make better use of the data already provided by others if we can include a larger number. I hope you will seek out your copy, complete and return it today. Much of the success or failure of this project now depends on whether or not you and others like you will take part.

Again, thanks to all for the time you have given or will be giving to the success of this project.

Sincerely,

Donald F. Parker

Donald F. Parker
CDR USN

P.S. An extremely large number have asked for a report of the conclusions of this study. Since many did not provide addresses however, and because so many asked, it may not be possible to provide direct reports. If I am unable to send each of you a report following the several months of analysis which lie ahead, I shall make every effort to prepare an article summarizing the results and submit it for publication to one or more of the wide circulation professional journals such as the Naval Institute Proceedings.

APPENDIX D

MEANS AND STANDARD DEVIATIONS OF VALENCE MEASURES

Outcome	Valence of Outcomes in Retired Role (Vr)				Valence of Outcomes in Active Role (Va)			
	Retirees		Active		Retirees		Active	
	M	SD	M	SD	M	SD	M	SD
1. PERSPOL	-3.09	1.26	-3.14	1.21	-2.34	1.61	-2.16	1.84
2. PROMOTION	2.57	1.61	2.41	1.57	2.56	1.89	2.40	1.68
3. CAMARAD	2.42	1.23	2.60	1.16	2.58	1.20	2.63	1.04
4. WIFESAT	2.64	1.17	2.75	1.12	2.17	1.57	2.47	1.19
5. RECOG	3.23	1.01	3.17	0.91	2.71	1.35	2.76	1.13
6. FAMSEP	-1.97	1.72	-1.78	1.65	-1.56	1.61	-1.21	1.79
7. FUTUREJOB	2.84	1.04	2.89	0.97	2.42	1.61	2.58	1.29
8. JOBEXCIT	1.93	1.51	2.19	1.45	1.95	1.55	2.11	1.39
9. SECURITY	2.92	1.11	3.04	1.06	2.64	1.37	2.89	1.00
10. TRANSFER	-2.12	2.05	-2.08	1.83	-1.31	2.00	-1.17	1.90
11. BADJOB	-3.47	0.97	-3.59	0.84	-2.73	1.39	-2.59	1.64
12. SLFESTEEM	3.16	0.94	3.08	0.99	2.76	1.33	2.81	1.06
13. INVOLRET	-2.48	1.70	-2.64	1.62	-2.37	1.74	-2.54	1.53
14. AUTHORITY	1.96	1.64	1.87	1.53	2.23	1.53	2.09	1.50
15. JOBIMPORT	3.05	1.00	2.91	1.04	2.81	1.36	2.82	1.04
16. CHALLENGE	3.04	1.05	2.81	1.08	2.71	1.34	2.70	1.13
17. DOUBLE $	1.26	1.45	1.08	1.42	0.97	1.63	0.91	1.71
18. JOBPRESS	-0.72	2.07	-1.10	1.83	-0.43	2.02	0.53	1.86
19. INCHARGE	1.99	1.64	1.89	1.71	2.29	1.57	2.38	1.55
20. LOCATION	2.98	1.07	3.10	1.08	2.35	1.60	2.56	1.26
21. ACCOMPLISH	3.25	0.87	3.12	0.90	2.86	1.32	2.92	0.98
22. INEQRULES	-3.17	1.11	-3.19	1.09	-2.74	1.33	-2.64	1.40
23. FULFILLMENT	3.08	0.89	2.91	1.01	2.71	1.36	2.64	1.11
24. INDEPENDENCE	3.03	0.95	2.81	1.02	2.58	1.42	2.53	1.14
25. JOBSAT	3.25	0.83	3.05	0.95	2.80	1.39	2.81	1.11

APPENDIX E

MEANS AND STANDARD DEVIATIONS OF INSTRUMENTALITY MEASURES

Outcome	Instrumentality of Retired Role				Instrumentality of Active Role			
	Retirees		Active		Retirees		Active	
	I	SD	I	SD	I	SD	I	SD
1. PERSPOL	-1.22	2.00	-1.06	1.90	1.29	2.61	0.63	2.49
2. PROMOTION	2.12	1.28	1.84	1.24	-0.15	2.74	0.13	2.45
3. CAMARAD	1.82	1.13	1.82	1.18	1.98	1.45	2.22	1.24
4. WIFESAT	2.16	1.17	2.03	1.18	0.66	2.07	1.68	1.61
5. RECOG	2.39	1.07	2.13	1.11	0.83	1.86	1.79	1.57
6. FAMSEP	-1.24	1.91	-0.95	1.93	1.33	2.26	1.12	2.10
7. FUTUREJOB	1.94	1.22	1.82	1.15	-0.32	1.93	0.97	1.70
8. JOBEXCIT	1.23	1.62	1.00	1.56	0.69	1.87	1.37	1.58
9. SECURITY	2.62	1.09	2.33	1.14	1.87	2.03	2.29	1.44
10. TRANSFER	-1.66	1.82	-1.32	1.79	1.30	2.13	0.69	2.09
11. BADJOB	-2.02	1.64	-2.03	1.57	0.48	1.91	-0.46	1.79
12. SLFESTEEM	2.54	1.02	2.22	1.12	1.68	1.68	2.35	1.34
13. INVOLRET	-1.80	1.73	-1.10	1.72	-0.78	2.21	-0.96	2.05
14. AUTHORITY	0.99	1.79	0.45	1.77	0.51	2.08	1.34	1.70
15. JOBIMPORT	2.30	1.14	2.02	1.18	1.10	1.86	2.03	1.49
16. CHALLENGE	2.48	1.10	1.88	1.21	0.66	2.01	1.65	1.53
17. DOUBLE $	0.03	2.18	-0.64	2.03	-2.46	1.97	-2.76	1.83
18. JOBPRESS	0.32	1.89	0.06	1.70	1.58	1.64	1.50	1.58
19. INCHARGE	1.20	1.72	0.83	1.85	0.93	2.11	1.49	1.81
20. LOCATION	2.52	1.29	2.29	1.89	0.31	1.79	1.25	1.54
21. ACCOMPLISH	2.50	1.06	2.19	1.14	0.99	1.76	1.89	1.50
22. INEQRULES	-1.63	1.89	-1.43	1.78	1.10	2.27	0.01	2.30
23. FULFILLMENT	2.31	1.04	2.03	1.08	0.85	1.83	1.77	1.48
24. INDEPENDENCE	2.38	1.11	1.97	1.21	0.62	1.91	1.63	1.55
25. JOBSAT	2.42	1.09	2.13	1.12	0.85	1.85	1.85	1.56